

**INVOLVEMENT OF MEN IN HEALTH,
NUTRITIONAL CARE AND SUPPORT OF
WOMEN ATTENDING ANTENATAL CLINICS
IN URBAN LOW INCOME AREAS: CASE OF
NAIROBI, KENYA.**

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**DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE MSc.
DEGREE IN APPLIED HUMAN NUTRITION IN THE DEPARTMENT OF
FOOD SCIENCE, NUTRITION AND TECHNOLOGY, UNIVERSITY OF
NAIROBI.**

AUGUST 2008

DECLARATION

I HEREBY DECLARE THAT THIS DISSERTATION IS MY OWN ORIGINAL WORK AND HAS NOT BEEN PRESENTED FOR A DEGREE IN ANY OTHER UNIVERSITY.

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DEDICATION

This work is dedicated to my wife Rose and twin daughters Melanie and Michele for their patience, understanding and encouragement in my very busy time while working on the project.

ACKNOWLEDGEMENT

First and foremost, I am grateful to the staff of the Department of Food Science, Nutrition and Technology of the University of Nairobi for approving this study. Special appreciation goes to my supervisors Dr. J.K. Sehmi and Dr. A.M. Mwangi who provided needed guidance and useful comments on different sections at different stages. My thanks also go to Dr. S. M. Mwikya who was initially one of my supervisors but dropped out after resigning from the University of Nairobi.

This study would not have been possible without the Ministry of Education (Kenya) granting research clearance of which I am very grateful. The cooperation and support rendered by the Nairobi City Council head office and the management and staff of Langata, Riruta and Ngara health centres can not go unnoticed.

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ABSTRACT

This cross-sectional descriptive and analytical study was conducted between September and October 2005. It sought to determine male involvement in health, nutritional care and support of pregnant women attending urban low cost antenatal clinics. Approximately half a million maternal deaths each year occur in developing countries. Lack of attention to women's nutritional health and society's indifference to pregnancy are the reasons why women die from pregnancy, childbirth and peripartum related complications.

The study involved 312 randomly selected mothers seeking antenatal services in three health centres (Ngara, Riruta and Langata) in Nairobi, and 34 purposively selected male partners out of the 35 who had accompanied the women. With use of structured questionnaires, data were collected on various aspects of male involvement as well as the socio-demographic characteristics of the respondents.

Majority of the women interviewed and their partners were young parents in their mid twenties. The study showed that most antenatal mothers (97.2%) and accompanying men (88.2%) supported involvement of men in health, nutritional care and support of women during pregnancy. Food provision, helping with household chores and ensuring access to healthcare when the woman is sick were the major roles respondents expected men to play. A woman's level of education was found to be significantly associated with the type of care and support expected from men.

According to most antenatal mothers (54.3%), men were only participating on average in caring for and supporting pregnant women. On the other hand, almost two thirds of the accompanying men (63.5%) thought men's involvement was good.

The major obstacles to male involvement were identified as financial constraints, cultural influences, men's negative attitude, and lack of knowledge on importance of involvement. To some accompanying men (15%), lack of privacy in antenatal clinics was a hindrance to men's accompanying women for joint nutrition and health counselling. The major suggested strategies to get men involved were education and sensitization of men and improvement of conditions and terms of work for men.

The study concludes that both men and pregnant women support the idea of involving men, and will not pose an obstacle to any programme that may be formulated to promote male involvement. However, participation of men is hindered by financial constraints, cultural views (belief pregnancy a woman's affair and men's negative attitude), lack of information and tight work schedules.

The study recommends a needs assessment to address men's fears, formulation and implementation of an education and sensitization programme that will target men, and invitation of men to the clinic for joint couple education, advice and counselling. Lastly similar studies need to be conducted in high-cost clinics and rural areas to facilitate better understanding of the issues.

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OPERATIONAL DEFINITIONS

Antenatal care:	Health care given to women and their families during pregnancy.
Gravida:	The total number of pregnancies a woman has ever had.
Intrauterine growth retardation:	Failure of the baby (foetus) to grow while still in the mother's womb (uterus).
Low birthweight:	A baby who weighs less than 2.5 kg at birth.
Malnutrition:	Throughout this study the term malnutrition is used to refer to the consequences of the combination of an inadequate intake of macro- and micronutrients.
Maternal mortality:	Death of women due to pregnancy and childbirth related disorders/complications.
Nutritional care and support:	Encompasses all actions, measures and behaviours of others that translate available food into good maternal health and nutrition during pregnancy.
Nutritional adequacy:	Refers to sustained maternal intake of safe food that is adequate in quantity and quality during pregnancy.
Opportunistic infections:	Infections that take advantage of an individual's impaired immunity to cause disease.

Postpartum complications:

Complications which affect women after delivery of the baby. These include haemorrhage, anaemia, infections and psychosis.

Puerperium:

The period zero to six or eight weeks after the mother delivers the baby.

LIST OF ABBREVIATIONS AND ACRONYMS

ACC/SCN:	Administrative Committee on Coordination/Subcommittee on Nutrition
AIDS:	Acquired Immune Deficiency Syndrome
AMREF:	African Medical and Research Foundation
ANC:	Antenatal Care
BMI:	Body Mass Index
CBS:	Central Bureau of Statistics-Kenya
CNS:	Central Nervous System
CRSP:	Collaborative Research Support Programme
DNA:	Deoxynucleic Acid
FANC:	Focused Antenatal Care
FGD:	Focus Group Discussion
FRHS:	Foundation for Research in Health Systems
GoK:	Government of Kenya
HC:	Health Centre
HIV:	Human Immunodeficiency Virus
ICASA:	International Conference on AIDS and STIs in Africa.
ICRW:	International Centre for Research on Women
ICPD:	International Conference on Population and Development
IFPRI:	International Food Policy Research Institute
IUGR:	Intrauterine Growth Retardation
IQ:	Intelligence Quotient
KDHS:	Kenya Demographic and Health Survey

KNH:	Kenyatta National Hospital
LBW:	Low Birth Weight infants
LMP:	Last Menstrual Period
MCH:	Maternal and Child Health services/clinic
MDGs:	Millennium Development Goals of the United Nations
MoEST:	Ministry of Education Science and Technology
MiM:	Men in Maternity project
MoH:	Ministry of Health-Kenya
NAIDS:	Nutritionally Acquired Immune Deficiency Syndrome
NCC:	Nairobi City Council
NGO:	Non-Governmental Organization
NTDs:	Neural Tube Defects
PAHO:	Pan American Health Organization
PMCT:	Prevention of Mother-to-Child Transmission of HIV.
PNC:	Postnatal Care services/clinics
RBC:	Red Blood Cells
RDA:	Recommended Daily Allowance
RH:	Reproductive Health
SPSS:	Statistical Package for Social Sciences computer software
STI:	Sexually Transmitted Infections.
UN:	United Nations.
UNFPA:	United Nations Fund for Population and Development
UNICEF:	United Nations Children's Fund

WHO: World Health Organization

WHO: World Health Organization

WHO: World Health Organization

Chapter 1: INTRODUCTION

1.1: BACKGROUND INFORMATION

Reproductive health (RH) refers to a wide spectrum of services rendered to women and their families throughout their entire life cycle. These services include health and nutrition care and support of women especially during pregnancy and the puerperium. Health and nutritional care and support of women during pregnancy encompasses all those actions, measures and behaviours of other people that, directly or indirectly, translate the available food and health resources into good maternal nutrition and health during pregnancy (UNICEF, 1998). Adequate health care and nutritional intake during pregnancy is crucial for the welfare of the mother, the foetus and the outcome of the pregnancy itself.

In Kenya and other developing countries in sub-Saharan Africa, Asia and the Caribbean, it is widely acknowledged that women endure a lifetime of poor health and nutritional status. The status of affected women worsens during the critical childbearing ages, especially when pregnant and lactating. This is usually attributable to societal, cultural, political and economic factors that discriminate against women. The result is high maternal morbidity and mortality rates that, by extension, also affect the other family members and the wider society.

The right of women to adequate health and nutrition at all times and especially during pregnancy and lactation is the subject of many international conventions and declarations to which most countries are signatories. One of the declarations (Article 12 Paragraph 2) during the UN Convention on the Elimination of all Forms of Discrimination against

Women held in 1979 states that "...state parties shall ensure to women appropriate services in connection with pregnancy, confinement and the postnatal period ... as well as adequate nutrition during pregnancy and lactation" (UN, 1989).

The above declaration was borne out of conviction that the full and complete development of a country, the welfare of the world and the cause of peace require the maximum participation of women on equal terms with men in all fields.

The idea of integrating men into RH equation is continuing to gain currency and credibility among development planners and funding agents. This has been as a result of acknowledging that men have a major influence on the ability of women to access better health and nutrition and adherence to the prescribed regimes of care. This is because in most developing countries, men dominate the decision making processes and occupy most leadership positions. They are usually considered 'heads of households' while women and children are dependants.

In acknowledging the importance of men in the success of programmes in the funds-recipient countries, major international donors have insisted that they will continue to support programmes that actively involve men in the target populations. This shift in emphasis is prompting re-evaluation of the concepts and premises on which programmes have been designed, implemented and evaluated. This is necessary because it has become evident that a crucial half of the RH equation – that is, men – has largely been neglected.

Most mainstream RH programmes designed to enhance adequate nutrition and health care and support have focused on women and children while neglecting men.

After the 1994 International Conference on Population and Development (ICPD) in Cairo, many countries developed RH Strategies to address the recommendations made. In Kenya, the Ministry of Health (MoH) developed a strategy that, among other things, seeks to enhance men's shared responsibility and promote their active involvement in responsible parenthood and respect for women's status.

Interventional strategies that seek to effectively involve men in nutritional care and support of women especially during pregnancy will greatly contribute to the achievement of the Millennium Development Goal (MDGs) of reducing three quarters of maternal mortality by 2015. By extension this will also contribute to the MDG objective of reducing child deaths by two thirds come the year 2015 (WHO, 2005). Achievement of these goals will improve the quality of life of families, communities and the wider society.

1.2: STATEMENT OF THE PROBLEM

It is estimated that ninety nine percent of the approximately half a million maternal deaths each year occur in developing countries where complications of pregnancy and childbirth take the lives of about one out of every eighteen women. Lack of attention to women's nutritional health and our society's indifference to pregnancy are the reasons why women die from pregnancy, childbirth and postpartum-related complications.

The unborn baby, infant and children also suffer as a result of poor maternal health and nutritional status. For example, factors which contribute to maternal morbidity and mortality lead to an estimated eight million stillbirths and infant deaths each year.

To address poor maternal nutritional health, there is need to design and implement nutritional interventions that will involve all people significant in a woman's life of which male spouses/relatives are crucial. However, little effort has been made to actively involve them as active participants in the health and nutritional care and support of women during pregnancy.

In most developing countries, Kenya included, data relating to men's involvement is not adequate to facilitate formulation of comprehensive, effective and appropriate interventions.

1.3: JUSTIFICATION OF THE STUDY

For the success of any interventional strategy to integrate men into health and nutritional care and support of women during pregnancy, there is need to first determine and accumulate data on their current and potential level of participation.

In Kenya, such data is inadequate and this study was set up to avail some of these data.

This will supplement the existing understanding on how well men can be actively involved in the nutritional care and support of women during pregnancy.

1.4: AIM OF THE STUDY

The study aimed at promoting and enhancing maternal health and nutrition during pregnancy.

1.5: PURPOSE OF THE STUDY

The purpose of this study was to provide data on men's current and potential level of participation in health and nutritional care and support of pregnant women, which can be utilized in formulating policies and designing programmes aimed at promoting maternal nutrition and health.

1.6: STUDY OBJECTIVES

1.6.1: Overall objective

The overall objective of this study was to establish the involvement of men in health and nutritional care and support of pregnant women attending antenatal clinics in urban low income areas of Nairobi, Kenya.

1.6.2: Specific objectives

The specific objectives of this study were to: -

- Determine the extent to which men participate in health and nutritional care and support of women during pregnancy;
- Identify the type of health and nutritional care and support expected from men by both men and pregnant women;
- Determine how demographic and socio-economic characteristics of pregnant women relate to the aspects of care and support they expect from men;
- Assess the attitude of men and pregnant women towards men's involvement in health and nutritional care and support of women during pregnancy;
- Determine the facilitating and prohibiting factors to men's involvement in health and nutritional care and support of women during pregnancy;

- Determine views on how men can be effectively integrated in health and nutritional care and support of women during pregnancy.

1.7: STUDY QUESTIONS

- How are men caring for and supporting women during pregnancy?
- What type of health and nutritional care and support do pregnant women expect from men?
- How are women's expectations of care and support from men related to their demographic and socio-economic backgrounds?
- What attitudes do pregnant women hold towards men's involvement in nutritional care and support of women during pregnancy?
- What are the facilitating and prohibiting factors to men's involvement in health and nutritional care and support of women during pregnancy?
- How can men be actively integrated in health and nutritional care and support of women during pregnancy?

1.8: STUDY HYPOTHESES

- The men's involvement in health and nutritional care and support of women during pregnancy is currently restricted to specific issues like providing financial support.
- The expectation of health and nutritional care by pregnant women is determined by their background characteristics.

- Pregnant women approve of the idea of actively involving men in nutritional care and support of women during pregnancy.

1.9: EXPECTED BENEFITS

The outcomes of this study are expected to inform and facilitate reproductive health (RH) policy formulators, planners and implementers drawn from the public, private and NGO sectors.

This will result in the designing, testing and adoption of interventions that will promote male involvement in their partners'/female relatives' health and nutritional care and support during pregnancy as one of the strategies to reduce maternal mortality and morbidity related to malnutrition and poor health in pregnancy.

Chapter 2: LITERATURE REVIEW

2.1: INTRODUCTION

Besides children and other groups of people in society, pregnant and lactating women are some of the most vulnerable to health and nutritional problems because of the special needs of the pregnancy status.

They are more likely to become malnourished if the family diet is inadequate or if food is distributed badly at the household level (Ritchie, 1983). They are not well fed in most African societies, not only because of poverty, but also because of traditional feeding patterns and restrictions.

The general well-being and reproductive performance of a woman is greatly enhanced by ensuring adequate maternal health and nutrition during pregnancy and lactation. This is met through enhanced antenatal care (ANC) where health and dietary advice and counselling is offered to the mother (Symonds, 1992), and minor complications are detected early and prompt treatment given.

Gender relations are a key factor in women's health and wellbeing. It determines different levels of susceptibility and vulnerability to particular conditions, access to health care and the variety of health services available to members of the community (Chapman and Gordon, 1999). Fathers and men in families represent one of the most important resources for the family's welfare. In most African communities, men dominate the decision making process and occupy most leadership positions (Engle 1997; Muriithia and Nordberg 1999; and Philips 2003). However, socio-economic

development services including nutrition interventions in developing countries have hitherto failed to take into consideration the major role of men in families, and its effects on women's and children's health and nutritional status during different stages of the life cycle.

Most programmes have targeted women and children and ignored men even in societies in which the father controls the decisions about the household and family welfare (Muia et. al., 2000).

To remedy this situation, UNICEF and other international development donors have insisted that they will continue to contribute to social development goals and projects that make great efforts to involve men (Engle, 1997). This has prompted re-evaluation of the concepts and premises on which programmes have been designed, implemented and evaluated.

Kenya has not been left out. After the 1994 International Conference on Population and Development (ICPD) in Cairo, the Ministry of Health (MoH) developed the National Reproductive Health Strategy 1997-2010 for Kenya (MoH, 1996). Among other things, the strategy seeks to strengthen and enhance men's participation in all facets of reproductive health.

Efforts to integrate men in health and nutritional care and support during the critical period of pregnancy is clearly one of the strategies that, if successfully implemented, will contribute to the achievement of the fourth and fifth Millennium Development Goals (MDGs) of attaining improved maternal and child health by the year 2015 (WHO, 2005).

These goals are to be achieved through reduction of maternal mortality by three quarters and child deaths by two thirds come the year 2015. The progress towards realization of these goals is, sadly, seriously off track. On reduction of child mortality, only Latin America and the Caribbean countries are on track; while on improved maternal health, only 17 per cent of countries, accounting for 32 per cent of the developing world's population, are on track (UNICEF, 2005). To illustrate the international community's resolve to work towards these MDGs, the theme of the 2005 World Health Day aptly states "Making Every Mother and Child Count" (WHO, 2005).

2.2: NUTRITION DURING PREGNANCY

The essential components of a balanced diet (proteins, energy, minerals and micronutrients) for a pregnant woman remain the same as those during the non-pregnant state. However, a pregnant and lactating woman has increased needs to meet requirements of her new role as the carrier of the foetus, deliverer of the baby and feeder of the infant (Musoke, 2001 and Ritchie, 1983).

According to Whitney and Rolfes (1999), Passmore and Eastwood (1986) and Sizer and Whitney (2000), nutrient needs in pregnancy are as summarized below:

- **Energy, protein and fats:**

A pregnant woman needs extra food energy to the tune of 300 Kcal above the RDA of about 2000 Kcal for non-pregnant women. The extra needs are particularly important during the second and third trimesters. Calories are

increased because of the need to spare proteins for the all-important tissue-building work. These needs may increase in case of teenage pregnancy, underweight women and physically active women.

The protein RDA for pregnancy increases from about 45-50 g in non-pregnant state to an average of 60 g during pregnancy. They are needed for the rapid pace of tissue building taking place in both the mother and the foetus.

Essential fatty acids are important for the growth of the foetus and are also essential nutrients in early development of the central nervous system (CNS). The CNS depends on products of both omega-3 and omega-6 fatty acids for function and structure.

- **Nutrients for blood production and cell growth:**

During pregnancy, new cells are laid down at a tremendous pace as the foetus grows and develops. The mother's red blood cell (RBC) mass also expands by about fifty percent. All nutrients are important to cater for the above changes, but the needs for folate, vitamin B₁₂, iron and zinc are especially crucial due to their key roles in the synthesis of RBCs, DNA and new cells.

- **Others:**

The RDA during pregnancy is set slightly above the non-pregnant state RDA for all other nutrients. Some of these nutrients (thiamine, riboflavin, niacin and vitamin B₆) are associated with energy and protein metabolism.

Therefore, it is plainly obvious that pregnant women require increased amounts of nutritious foods to promote child development and growth. They should gain 10- 20% of their bodyweight during pregnancy. Weight gain is important for new maternal and foetal tissue development and maintenance (UNICEF, 1998).

In addition to higher nutrient needs, pregnancy is also a period when the woman should do less work and be encouraged by family members and the community to have adequate rest (UNICEF, 1998).

2.3: HEALTH CARE DURING PREGNANCY

2.3.1: Antenatal care (ANC)

Antenatal care (ANC) refers to the care that is given to an expectant mother from the time conception is confirmed until the beginning of labour. ANC is an essential component of preventive medicine. Its institution has resulted in dramatic decline in foetal and maternal morbidity and mortality (Caplan, 1982). In addition to monitoring the progress of the pregnancy, it aims to provide appropriate support for the woman and her family and information that will allow them to make sensible and informed choices (Das, 1999). During antenatal visits, detailed history of the woman is taken, physical examination performed, and vital signs (blood pressure, respiratory rate and pulse rate) are determined in order to provide baseline readings for comparison throughout pregnancy (Pillitteri, 1999).

Laboratory tests are also carried out during the visits. Blood samples are taken to determine haemoglobin level, blood group, Rhesus factor status, VDRL test for syphilis,

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HIV test, and Rubella immune status (Das, 1999). Urinalysis is done on urine sample to detect presence of bacteriuria, glycosuria, ketonuria and proteinuria. Presence of these may be an indicator to an underlying systemic disease (Dunnihoo, 1990).

ANC should follow a predetermined schedule to be effective. Continuing antenatal care should be carried out at monthly intervals during the first 28 weeks, at two-week intervals from 28-36 weeks gestation, and thereafter at weekly intervals until delivery (Dunnihoo, 1990).

Recently, the concept of Focused Antenatal Care (FANC) has been introduced. It refers to the minimum number of clinic visits each of which has specific items of client assessment, education and care to ensure prevention or early detection and prompt management of complications. The focus is on birth preparedness and readiness to handle complications (MoH, 2002). Under FAC, a pregnant woman should make a minimum of four comprehensive and personalized ANC visits spread out during the entire pregnancy as:

- 1st visit: 16 weeks gestation
- 2nd visit: 20-24 weeks gestation
- 3rd visit: 28-32 weeks gestation
- 4th visit: 36 weeks until delivery

2.3.2: ANC trends in Kenya

The 2003 KDHS indicates that 88 percent of women in Kenya receive antenatal care from a medical professional, 2 percent from traditional birth attendants (TBAs), while 10 percent do not receive any ANC at all (CBS, 2004). Nairobi province has the highest ANC coverage (over 90%) while North Eastern province has the lowest (about 25%).

On the source of ANC, the vast majority of women who obtained ANC went to government/public health facilities (71%), while private medical sector accounted for only 28 percent (CBS, 2004). In Nairobi, government sources account for 65 percent while private sector serves 35 percent.

In Kenya, slightly over half (52%) of all pregnant women make four or more ANC visits, while 36 percent make fewer than four visits. Two thirds of urban women (67%) make four or more visits compared to less than half (49%) rural women (CBS, 2004).

2.4: MALNUTRITION DURING PREGNANCY

Malnutrition is a major cause of maternal morbidity and mortality especially in the developing countries. Fulfilling food, health and care needs can be a major struggle for many women in the developing world, where economic, social and cultural factors may be a barrier to good nutrition (UNICEF, 1998).

In a longitudinal study involving Egyptian women to determine energy intakes in the last six months of pregnancy and first six months of lactation, it was found that their energy intakes were not increased above that of their non-pregnant and non-lactating counterparts. The findings were supported by mean weight gain of 7kg in contrast to the

normal 10-12 kg (Nutrition CRSP, 1982). This suggested that the usual reserves in pregnancy for lactation did not occur. This can explain why in Egypt 9 percent of all maternal deaths occur during the first six months of pregnancy (first and second trimesters) and a further 16 percent during the third trimester (WHO, 2005).

In other parts of Africa the picture is the same. In a recent study in six West African countries, a third of all pregnant women were shown to experience some illness during pregnancy and close to 3 percent required hospitalisation. This excluded problems related to unsafe abortion (WHO, 2005).

Elsewhere in Bangladesh, Dewan (2001) found that maternal energy intake during pregnancy was only 1464 kcal per day. This was considered extremely low for these women who must be on their feet most of the day. The outcome was low pregnancy weight gain of about 4 kg during the second half of pregnancy. This was less than half the weight gain in the same period in well-nourished women in the developed countries.

In Kenya, silent and neglected tragedies occur to women in their prime of life. Figures are alarming with total annual maternal deaths estimated at 4 300 and over half a million women with obstetric complications each year (Dugald Baird Centre, 2000). At this magnitude, many Kenyans are affected by these tragedies in one way or another – loss or disablement of a wife, sister or, indeed, a mother. The loss is not limited to individuals or families – it is also a loss to Kenya since a woman makes crucial contribution to socio-economic development.

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From KDHS 2003, maternal deaths in Kenya represent 15 percent of all deaths to women age 15 to 49 years each year. When converted to maternal mortality ratio, the estimate translates to 414 maternal deaths per 100 000 livebirths. The estimated age-specific mortality rates display a plausible pattern, being higher at the peak of the childbearing ages of the twenties and thirties than at the younger and older ages.

Malnutrition has major consequences for women, affecting their health, productivity and overall quality of life. Of the major causes of maternal death during pregnancy and childbirth, three (that is haemorrhage, infection and obstructed labour) are directly or indirectly related to nutritional problems (Gillespie, 2001).

Maternal mortality is of more significance in Africa and other developing countries of the world. According to estimates, 529 000 maternal deaths were recorded globally in the year 2000 (WHO, 2000). These were equally divided between Africa (251 000) and Asia (253 000). Four per cent of these (22 000) occurred in Latin America and the Caribbean while only one per cent (2 500) were in the more developed regions of the world (WHO, 2000).

2.5: DETERMINANTS OF MALNUTRITION IN PREGNANCY

Malnutrition is not a simple problem with a single simple solution. Multiple and interrelated determinants are involved in its development. Similarly, an intricate series of approaches, multifaceted and multisectoral, are needed to deal with it.

According to UNICEF (1998), the determinants operate at three levels and are categorized as basic at societal level, underlying at household and community level and immediate at individual level. These levels are as shown in Figure 1 below.

2.5.1: UNICEF's conceptual framework

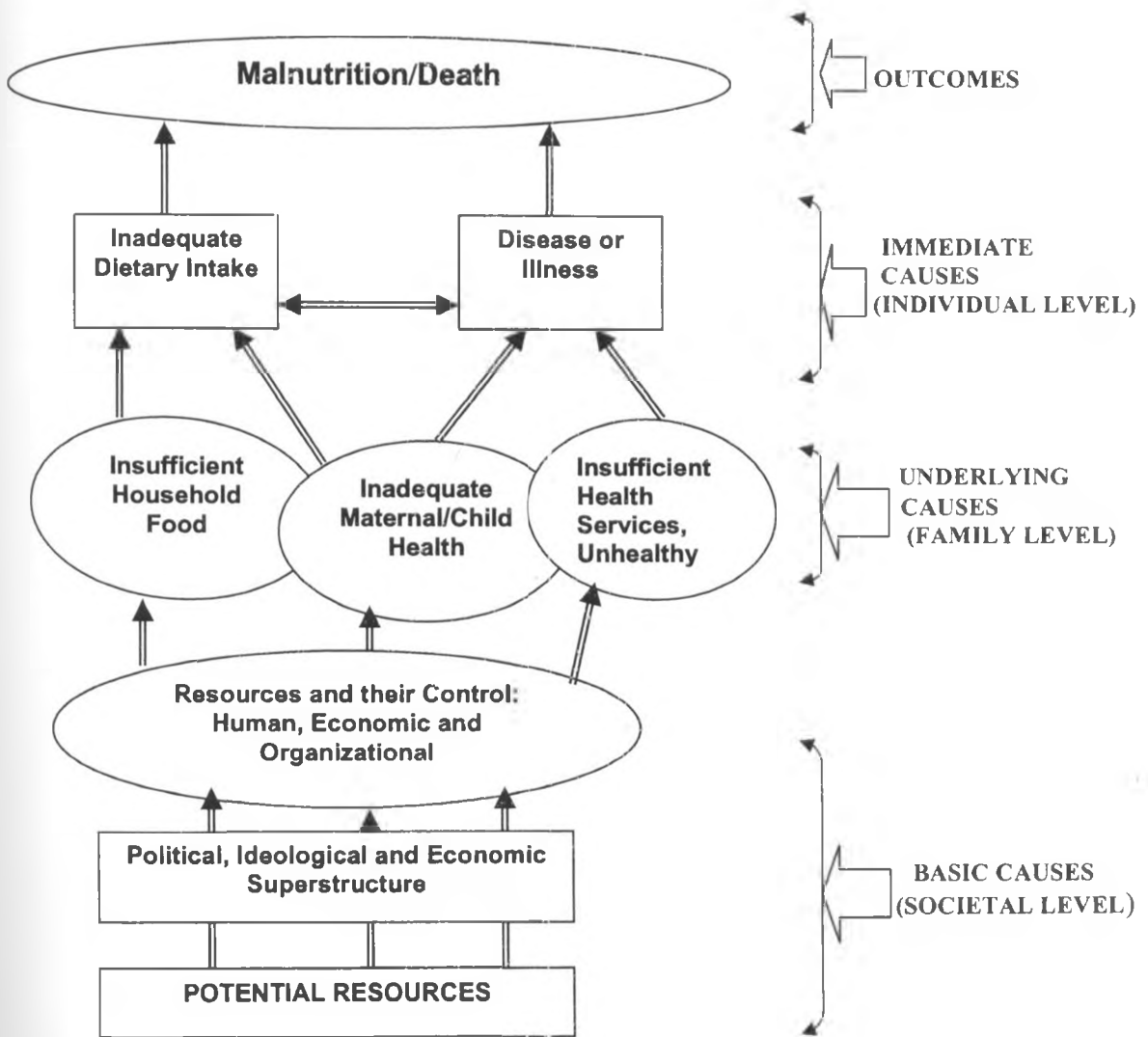


Figure 1: UNICEF's Conceptual framework of the determinants of malnutrition
 Source: UNICEF 1998

2.5.2: Nutritional risk factors during pregnancy

Pregnancy is the period mostly laden with health and nutritional risks during a woman's lifecycle. According to Pillitteri (1999) and Ritchie (1983), the nutritional risk factors are varied but inter-related;

- **Under-nutrition during childhood:** Girls who were LBWs and remained undernourished most of their childhood are likely to be stunted. Their condition is worsened when they become pregnant.
- **Age at pregnancy:** Adolescents (less than 18 years at LMP) are more predisposed to malnutrition than the older age groups. They still have increased nutritional needs for their own growth and development and pregnancy overstretches the capacity of the body.
- **Short intervals between pregnancies:** The woman's body has not had enough time to replace nutritional stores depleted during previous pregnancy.
- **Poverty:** Family may not have resources to purchase adequate food to meet pregnancy nutritional needs.
- **Heavy physical workload:** Leads to expenditure of more energy than they may be getting from food. This will lead to loss of weight and under-nourishment.
- **Traditional customs:** Some customs that prohibit intake of certain foods during pregnancy are immediate causes of malnutrition.
- **Adherence to food fads:** The foods preferred and eaten may not be those that are adequate for needs during pregnancy.
- **Multiple pregnancies:** Demands supply of enough nutrients for multiple foetal growth and development.

- Lack of dietary diversification: Leads to lack of certain important nutrients such as vitamins and minerals.
- Drug use: Substances like alcohol, cigarettes and other drugs of abuse may be ingested in preference to food.
- Existence of a chronic illness: This may require a special diet that may be low in a particular essential nutrient.

2.6: EFFECTS OF MALNUTRITION IN PREGNANCY

2.6.1: Effects of Malnutrition on the mother

Under-nutrition in pregnancy results into the inability of the mother to accumulate the much needed nutrient stores. The mother uses her own stores to provide the energy, protein and micronutrient requirements for foetal growth and development (King and Burgess, 1972). This means foetal growth and development will proceed at the expense of her nutritional and health status.

The immune system of the mother is not spared either. Malnutrition affects the capacity of the immune system to fight infection and keep the body health (Piwoz, 2000). The Nutritionally Acquired Immune Deficiency Syndrome (NAIDS) is compounded in this era of HIV/AIDS since both deficiency syndromes produce similar changes in the body. Malnutrition is known to impair the immunity of an estimated 100 million children and several million pregnant women, none of them infected by HIV (UNICEF, 1998). Because of impaired immunity, malnutrition during pregnancy increases the mother's susceptibility to infection and ill-health (Magda, 2003).

Anaemia is one of the major complications of pregnancy. According to UNICEF (1998), anaemia is suggested to be responsible for an estimated 20 percent of maternal deaths per year globally. Overall, an estimated 51 per cent of African women are anaemic during pregnancy. In anaemic women, the danger of death as a result of haemorrhage is greatly increased, and according to some estimates, severe anaemia is an associated cause in up to 50 per cent of maternal deaths in developing countries (ACC/SCN, 1991).

Deficiencies of iodine, zinc and vitamin A have grave consequences for the affected pregnant women. Apart from the danger of goitre in the long-run, iodine-deficiency increases the chances of miscarriage, stillbirth and prematurity (Barker, Martin and Piwoz, 1996).

Although the magnitude of zinc deficiency is not well-known, mild and moderate deficiency is likely to be common, particularly in Africa where traditional diets are low in zinc but relatively high in phytate which reduces the bioavailability of zinc and iron in the body. To illustrate this, one study in Malawi estimated that 98 per cent of children and pregnant women had inadequate intakes of zinc, largely because of the high phytate content of their staple diets (Gibson, 1996). Among women, zinc deficiency is associated with high risk of spontaneous abortion, LBW infants, IUGR, congenital malformations, preterm labour, reduced maternal-foetal transport of vitamin A and maternal antibodies, and complications of the first and second stages of labour (Caulfield, Zavaleta and Shankar, 1996).

In addition to their reproductive roles, women contribute to their nations' economic development by caring for their families and engaging in income-generating activities, farming, and other productive labour. Undernutrition diminishes women's potential to contribute to their family, community, and nation (Barker, Martin, and Piwoz, 1996).

2.6.2: Effects of Malnutrition on the Foetus and Infant

Maternal nutrition before and during pregnancy affects the growth and development of the foetus and the outcome of the pregnancy. Malnutrition increases the risk of Intrauterine Growth Retardation (IUGR), which results in Low Birth Weight (LBW) infants (Allen et. al, 1992). It is well established that women with a higher Body Mass Index (BMI) give birth to heavier infants. In a Nutrition CRSP study in Kenya, all of the LBWs were born to women with a BMI of less than 21 (Allen et. al, 1992). The study demonstrated a strongly positive correlation between the mother's BMI and infant birth weight ($r = 0.59$, $p < 0.001$).

LBW is an important public health problem in developing countries where the capacity to care for such babies is not well developed. It is associated with a high neonatal mortality rate whereby 50 percent of 3.9 million neonatal deaths occur to babies born too small either because of IUGR or preterm delivery (Sheriff, 2004 and McCormick, 1985). Some studies have also suggested that malnutrition in-utero is associated with increased incidences of chronic diseases in old age (Barker, 1992).

The brain of a foetus develops rapidly between the 10th and 18th weeks of pregnancy. Malnutrition during this period may have devastating effects on the nervous system since it affects the neuronal and glial cell growth and development. Babies born to mothers who had poor diets may exhibit some form of mental retardation and/or behavioural problems. This is because certain foods contain amino acid precursors (starting materials) for some neurotransmitters and a diet deficient in these precursors will lead to impaired brain development and neurotransmitter imbalance (Chudler, 2005 and Andra et. al., 1998). The neurotransmitters whose balance may be upset include norepinephrine, dopamine, acetylcholine and serotonin (5-HT).

Maternal malnutrition is also associated with increased incidence of certain congenital abnormalities in the newborn. Mothers who do not get adequate folic acid are more likely to have a child born with neural tube defects (NTDs). NTDs may result in a part of one or more vertebrae failing to develop completely thus leaving a portion of the spinal cord unprotected, a condition called spina bifida (Basu and Dickerson, 1996 and Berkow, 1997).

A baby born to a woman who experienced deficient intake of certain micro-elements prior to and/or during pregnancy is also exposed to certain complications in life. In case of deficient intake of iodine by the mother, the baby may experience mental retardation, cretinism, deaf-autism, and/or poor muscle coordination (Barker, Martin and Piwoz, 1996). Recent analyses suggest that moderate iodine deficiency without above clinical

symptoms is associated with the average loss of 13 Intelligence Quotient (IQ) points (UNICEF, 1995).

In case of maternal zinc-deficiency, the infant and/or child is likely to experience diminished immune function hence frequent infections, poor growth, and suffer from impaired learning and mental development (Caulfield, Zavaleta and Shankar, 1996).

2.7: INVOLVING MEN

2.7.1: Rationale for men's involvement

In most developing countries men still dominate most spheres of life from the household to the national level. They are usually considered heads of households (Philips, 2003); dominate the decision making processes and hold most leadership positions in society (Muriithia and Nordberg, 1999); and in most cases hold and control expenditure of the family cash (Kunene, 2003). This position of men in society confers onto them significant influence on women's nutritional health and general well-being.

During the 2001 WHO Meeting of Regional Advisors in Reproductive Health in Geneva, the major goal was to review and reconsider strategies for the involvement of men in programmes aimed at improving reproductive health. After thorough review of programmes so far undertaken, some of the lessons learnt were that men have a unique role to play in promoting safe motherhood and they should not be viewed as passive onlookers or mere obstacles; and that men too are greatly affected by deaths or ill-health of their wives or female relatives and they need support to recognize factors which contribute to maternal morbidity and mortality (WHO, 2001).

To illustrate the vital role men play, and hence justification for their involvement, the KDHS 2003 sought to evaluate the participation of women in decision-making at the household level. Out of about 5 000 married women interviewed, only 12 percent had independence of deciding on large household purchases while 61 percent reported that husbands were more likely to make such decisions. A further 40 percent reported making decisions on their own health care by themselves while 43 percent said that their husbands make such decisions alone (CBS, 2004).

The KDHS 2003 also confirmed existence of socio-economic disparities between the genders. General illiteracy among women was estimated at almost double (21 percent) that of men (12 percent). Also an estimated 58 percent of women compared to 72 percent men were employed at the time of the survey or in the 12 months preceding the survey (CBS, 2004). These disparities, coupled with cultural restrictions, may greatly compromise women's independence in ensuring their own nutritional health and general welfare. This increases the likelihood that they will depend on decisions of others, usually their partners (UNFPA, 2000).

2.7.2: Opportunities for male involvement

Although men have largely been ignored in planning of most nutritional and reproductive health programmes targeting women and children, there are opportunities to facilitate their integration. The idea of integrating men into the reproductive health equation has in the last decade gained currency and credibility and the international donor community

and most state governments have developed strategies to promote and enhance men's participation (Engle, 1997).

From Kunene's (2003) findings, men are very interested and willing to be involved. Likewise, women were receptive to the idea of actively involving men in RH matters. During the WHO regional RH advisors' meeting it was also learnt that in some settings, men are receptive and eager to participate in safe motherhood campaigns and to be active partners for their wives during pregnancy and childbirth; and that women want men to be involved as partners or advocates for increased access to care and better health (WHO, 2001).

2.7.3: Impact of involving men

Efforts to involve men have a beneficial effect on women. In an interventional study, Sternberg and Hubley (2004) found that men who were given information about ANC services, nutrition and diet, and weight gain during pregnancy had greater knowledge of the importance of ANC and their spouses made more visits to the clinics. This was in contrast to men in the control group who were not exposed to RH information.

In another study, pre- and post-test quasi-experimental, Chander (2002) demonstrated that with men's involvement there is improvement in communication and decision-making. In an interventional study whose main goal was to assess the impact of male involvement so as to improve RH and pregnancy outcomes, there was evidence of increased male involvement behaviour and continued positive attitude for pregnant and lactating women (Puterwitz et. al., 2000).

2.7.4: Obstacles to male involvement

Several obstacles still need to be overcome before successful integration of men into nutritional health care and support of women can be realized. Programmes designed to involve men are generally unsuccessful partly due to socio-cultural factors (Puterwitz et al., 2000). Most men still believe that maternity is a woman's domain and men are not expected to play an active role. Some men did not have time to dedicate to their expecting spouses because of demands at the workplace.

In a cross-sectional descriptive study in Kenya, Muia et al. (2000) identified several constraints to male involvement. The constraints identified through Focus Group Discussions (FGDs) included financial constraints, partners not living together due to work demands, men's ignorance of the women's situation due to poor communication between partners, and socio-cultural barriers.

Through the FGDs, women themselves were also identified as obstacles. Most of them maintained that the man's primary function in relation to women's RH care is to provide financial assistance in terms of transport and payment of hospital bills (Muia et al., 2000).

Institutional factors and attitudes of health workers/service providers in RH have also been identified as impediments to male involvement (ICRW and FRHS, 2004; Puterwitz et al., 2000; and Muia et al., 2000).

2.8: GAPS IN KNOWLEDGE

In Kenya, and most sub-Saharan African countries, there are gaps in information on male involvement in reproductive health issues especially nutritional care and support of women during pregnancy. With a global move to involve men in all aspects of reproductive health, it is important to understand the existing opportunities and challenges in the context of our local circumstances.

Chapter 3: STUDY SETTING AND RESERCH METHODOLOGY

3.1: STUDY SETTING

The study on men's involvement in health, nutritional care and support of women during pregnancy was conducted in Nairobi, Kenya. Nairobi lies at 1930 m above sea level and covers an area of 696 sq. km (GoK, 2001). It is situated at latitude 1° south of the equator and longitude 36.6° east of Greenwich Meridian.

Nairobi is the capital city of Kenya. It is the seat of the Government of Kenya where the Executive, Legislature and Judicial arms of government are headquartered. All government ministries and departments have their headquarters in Nairobi city. It is also the economic, industrial and social hub of Kenya. The major economic activities and enterprises, both public and private, have Nairobi as their headquarters.

Administratively, Nairobi is a province-district and Local Authority. Being the smallest, it is one of the eight provinces of Kenya others being Western, Nyanza, Rift Valley, Central, Eastern, Coast and North Eastern. As a district, Nairobi is subdivided into eight divisions. The divisions are Makadara, Kasarani, Embakasi, Central, Pumwani, Dagoretti, Langata and Westlands. As a local authority, under the Ministry of Local Government, the Nairobi City Council (NCC) is the governing body.

Nairobi ranks as the most densely populated province and urban area in Kenya. The population was 2,143,254 people with a density of 3,079/sq. km according to the 1999

national census (GoK, 2001). The population has since increased and is currently estimated to be close to 3 million people.

The rapid population growth is attributable to rural-urban migration since most people migrate to look for employment in the more economically and industrially vibrant capital city. The rapid population growth has led to emergence of slums and shanties, which are inhabited by the largest proportion of city dwellers. The slum dwellings are found in areas like Kibera, Mathare, Kawangware, Mukuru, Kangemi and Korogocho.

Nairobi's transport and communication infrastructure is well developed compared to other urban areas of Kenya. It is home to Jomo Kenyatta International and Wilson Airports. The Rift Valley Railways is headquartered in Nairobi where it operates commuter services from the city centre to some residential areas. The road network is expansive although some roads are in a dilapidated state due to years of neglect by the authorities responsible for their maintenance.

The communication network is well developed making it easier to conduct business locally and internationally. Telkom Kenya (a government parastatal) dominates the landline telephony service and two privately-owned companies provide mobile telephony services.

Nairobi is basically a political, socio-economic and industrial capital with very little agricultural practices/activities. Urban agriculture is practised in peri-urban areas and some city estates like Ruai and Kahawa. Most of the food consumed in the city is brought through channels of trade from the surrounding agricultural lands and upcountry.

Through trade and commerce, both local and international, the residents of Nairobi have all foods at their disposal as long as they can afford.

Nairobi city has a well-developed educational infrastructure at all levels i.e. pre-primary, primary, secondary, and tertiary institutions. The facilities are either public- or private-run.

The city centre is home to various private colleges offering business and technology courses for school leavers and the working class.

The city boasts of the best health facilities in Kenya that are manned by highly qualified health personnel. The Kenyatta National Hospital (KNH) is located in Nairobi. It is the premier national referral and teaching hospital in the country. Private-owned hospitals are the Nairobi, Aga Khan, Gertrude's Garden, Mater, Guru Nanak, and MP Shah. Some health facilities are church owned and provide curative, preventive and rehabilitative health services.

The city authority runs a total of 56 facilities in all eight divisions. The facilities are ranked as dispensaries, clinics and health centres. They provide curative, preventive/promotional and rehabilitative health services. Pumwani Maternity Hospital run by NCC is said to be the largest such hospital in East Africa. It specializes in the provision of antenatal, delivery and postnatal services to the city residents. It also offers clinical training to different cadres of health workers and runs a school of midwifery.

3.2: RESEARCH METHODOLOGY

3.2.1: Study Design

This is a cross-sectional descriptive and analytical study on the involvement of men in health and nutritional care and support of women during pregnancy.

3.2.2: Study Population

The study targeted pregnant women who had come to seek antenatal care services in the MCH clinics of the selected study sites.

3.2.3: Sampling

3.2.3.1: Sample size determination

The study sample size of 312 ANC mothers was determined using the Fisher et. al. (1991) formula given by: $n = z^2 pq / d^2$

where n= the required sample size;

z= the statistic value at desired confidence level (in this case 95%);

p= estimated proportion of women whose male partners accompany to the ANC clinics or participate in care;

q= (1-p); and

d= degree of accuracy of the proportion estimate to the true proportion.

In this study, the estimated proportion was 50% or 0.5 (proportion of target population unknown), the desired confidence level was 95% which translates to $z = 1.96$ (rounded off

to $z=2$). The desired degree of accuracy was that the sample size should be within 6% of the true proportion ($d= 0.06$).

Therefore sample size was calculated as:

$$n= (2)^2(0.50) (0.50) / (0.06)^2 = 277$$

Allowing for extra 12¹/₂ % gave

$$(277 \times 12.5) / 100 = 35 \text{ extra respondents.}$$

Therefore the total sample size was:

$$277+35$$

$$= \underline{\underline{312 \text{ ANC Mothers.}}}$$

3.2.3.2: Sampling procedure

As shown in Figure 2 below, multistage sampling procedure was employed in this study.

The study area, Nairobi City, was purposively chosen from other major urban areas of Kenya. Dagoretti, Central and Kibera were randomly selected from the eight divisions of Nairobi. The study sites being Riruta HC (Dagoretti division), Ngara HC (Central division) and Langata HC (Kibera division) were also purposively selected from other facilities like dispensaries and clinics run by the NCC in the three divisions.

The number of respondents from each HC was determined using probability proportionate sampling based on the first three quarters of year 2004 ANC workload at each site. Using this procedure, 88 (about 28 percent), 113 (about 36 percent) and 111 (about 36 percent) respondents were interviewed at Ngara, Riruta and Langata HCs

respectively. The respondents at each HC were selected using simple random sampling technique.

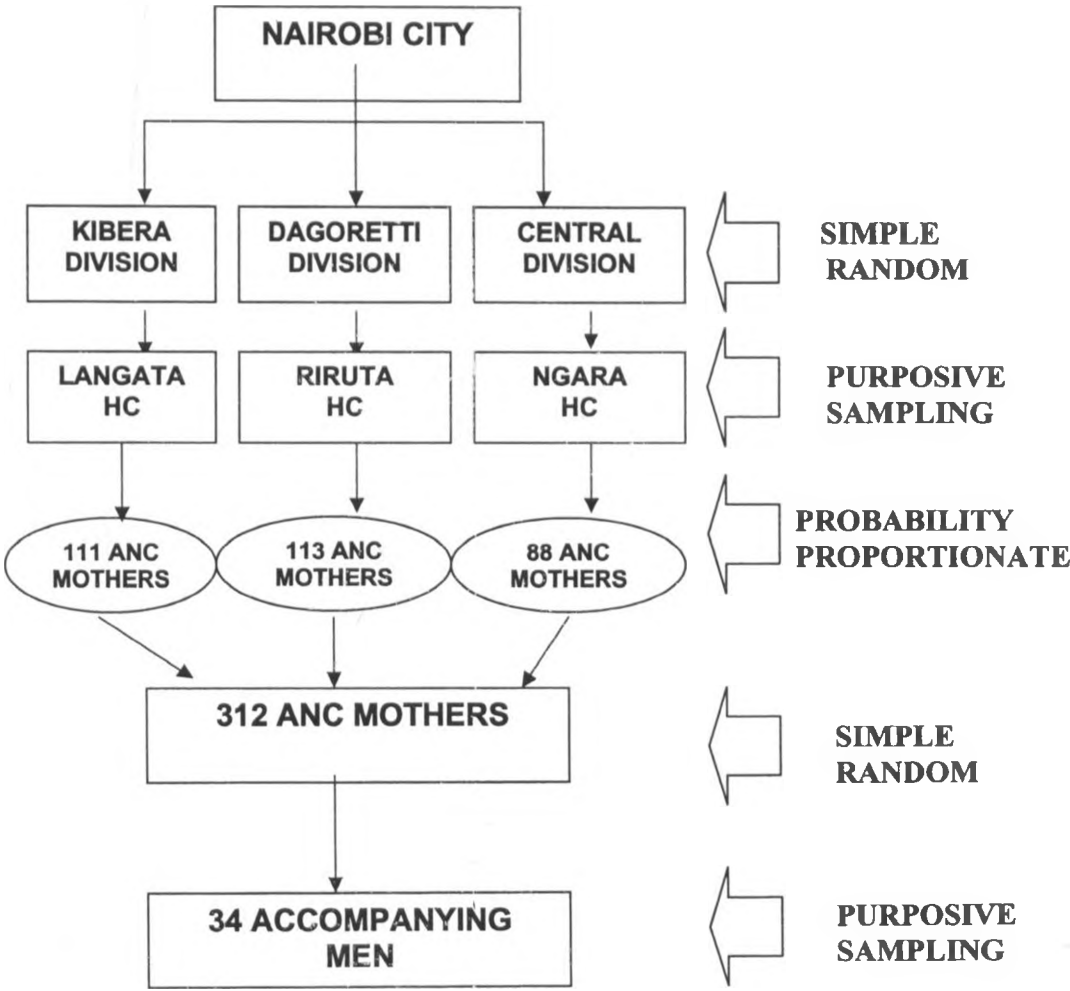


Figure 2: Flow diagram of the sampling procedure

3.2.4: Study personnel

3.2.4.1: Personnel recruitment

The study involved two (2) research assistants with the principal researcher being the supervisor. The enumerators were recruited basing on the following criteria:

- Has completed at least form four (4) level of education;
- Fluency in written and spoken English and Swahili;

3.2.4.2: Personnel training

The two research assistants underwent one-day training at a central venue. The training curriculum contained:

- Introduction to the study;
- Study objectives;
- Data collection techniques;
- Ethics and conduct while in the field; and
- Briefing on allowances, and schedule of data collection.

The principal researcher conducted the training. The learning methods were lecture and role-play, while handouts of sample questionnaire were the learning aids.

3.2.5: Data collection

3.2.5.1: Data collection instrument

Data were collected using a questionnaire. The questionnaire was piloted on at least 10 ANC mothers in an NCC health centre that is not among the selected study sites. After piloting modifications were made and the final draft produced in required numbers.

3.2.5.2: Data collection method

The research assistants and the principal researcher administered the questionnaires as an interview schedule. The mothers' reproductive history was collected through review of the ANC card.

3.2.6: Ethical considerations

Authorization to conduct the study was from the Ministry of Education, Science and Technology (MoEST), Kenya. The administrators of the study site and the local provincial administration were informed of the intended study prior to data collection.

Respondents were interviewed after giving an informed consent. An Informed Consent Form was used to explain the basic nature of the study and seek the agreement of the respondents to be interviewed. Those who did not want to be interviewed had their wishes respected.

Confidentiality of the information collected was maintained. Code numbers were used to identify the respondents instead of names. Respondents were assured of the confidentiality of the information they gave.

3.2.7: Data quality assurance

The research assistants underwent training prior to data collection. The training involved the standardization of ways of asking questions under different variables so as to ensure the validity of responses. The supervisor monitored the work of assistants in the field.

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The study questionnaire was piloted and modification made according to the identified inconsistencies. Data cleaning/editing (field-editing) was done at the end of each day's work.

3.2.8: Data management

3.2.8.1: Data coding and editing

Categories under a particular variable were coded using numerical codes. Most of the coding was done during questionnaire design stage (pre-coding). Some coding was also done just before data entry.

Data editing was first done in the field (field editing) and then on the already coded data using the computer (machine editing). The editing was done to check for "illegal" codes, omissions, logical inconsistencies and improbabilities.

3.2.8.2: Data entry and analysis

Data entry was accomplished by use of the Statistical Package for Social Sciences (SPSS) Version 12.

The data analysis also utilized the SPSS software to generate different descriptive and inferential statistics depending on the variable under consideration and the study objectives. The charts and graphics were done using the Microsoft Excel and SPSS programmes.

The data analysis matrix is shown in Table 1 below.

Table 1: Data analysis matrix

Analysis question	Variable type	Basic statistics and charts	Confirmatory/advanced statistics
What is the socio-demographic and reproductive profile of the respondents/partners?	Nominal	Frequencies, bar charts, pie charts	Standard errors, confidence limits Chi-square test
	Discrete/categorical	Frequencies, mean, mode, median, quartiles, pie charts, line graphs, boxplots	Standard errors, confidence intervals, Chi-square test
What care do women expect from men during pregnancy?	Nominal	Frequencies, bar charts, tables	Chi-square test
What is the rating of current male involvement?	Ordinal	Frequencies, tables, graphs/charts	Kruskal-Wallis test
Is there a difference between aspects of care expected and backgrounds of ANC mothers?	Nominal and Numerical	Frequencies, 2 way tables, charts/graphs	One-way ANOVA
What is the attitude of women towards active male participation?	Ordinal	Frequencies, charts/graphs, tables	Kruskal-Wallis test
What are the obstacles to male participation?	Nominal	Frequencies, 2-way tables	Chi-square test
What can be done to promote male participation?	Nominal	Frequencies, 2-way tables	Chi-square test
To what extent are pregnant women dependent on their partners for livelihood?	Nominal	Frequencies, 2-way tables	Chi-square test

3.2.9: Study Limitations

Due to financial and time constraints, the study did not cover pregnant women attending NCC health centres and other facilities in other divisions of Nairobi city. Additionally, the pregnant mothers not attending ANC clinics are not covered in the study.

The study was conducted in an urban setting therefore the male involvement situation existing in rural settings is not captured for comparison purposes.

The study findings also relate to pregnant women's and the few accompanying men's point of view, but a wholesome picture of male participation would have been obtained when a relatively large number of male partners had been interviewed.

The study also failed to utilize Focus Group Discussion (FGD) mode of data collection. FGD would have come in hand to find out why some men did not accompany their spouses to the clinic.

Chapter 4: STUDY RESULTS

Total respondents sampled were 312 pregnant women seeking ANC services and all the 35 accompanying male partners. One of the men dropped out leaving a sample size of 34.

The distribution of respondents per study site was as shown in Table 2.

Table 2: Frequency distribution of antenatal women (N=312) and accompanying men (N=34) at the study sites

Health Facility	Antenatal mothers (n)	Accompanying men (n)
Riruta	113 (36.2%)	9 (26.5%)
Langata	111 (35.6%)	15 (44.1%)
Ngara	88 (28.2%)	10 (29.4%)
Total (N)	312 (100%)	34 (100%)

In this chapter, the findings are categorized as: -

- Background characteristics,
- Food acquisition and adequacy, and
- Aspects of men's involvement as supportive partners.

4.1: BACKGROUND CHARACTERISTICS

4.1.1: Marital status of antenatal mothers

Out of the 312 antenatal women, majority (84%) reported that they were in monogamous marital unions. Those in polygamous relationships were only 3 percent. On the other hand, those who were single at the time of interview were 12 percent, while widows were one percent.

Overall, at the time of interview 273 respondents (87 percent) were married or living together with a man in a consensual union while 39 (13 percent) were not married (single or widows).

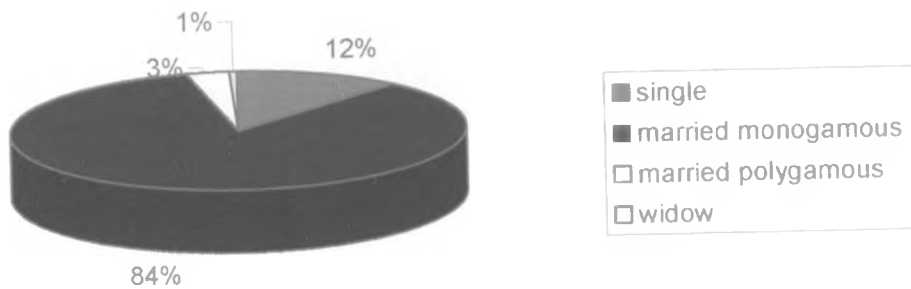


Figure 3: Percentage distribution of antenatal mothers' marital statuses (n=312)

4.1.2: Age of respondents

Women seeking antenatal services at the study sites were aged between 15-39 years old. The mean age was 23.7 (std deviation=4.7). The medial and modal ages were 23 and 21 years respectively.

When grouped, most women were aged 21-25 years (43.9%) followed by age groups 15-20 years and 31-35 years, which represented 26.9 and 20.2 percent respectively. The age group distribution of antenatal mothers is as shown in Figure 4 below.

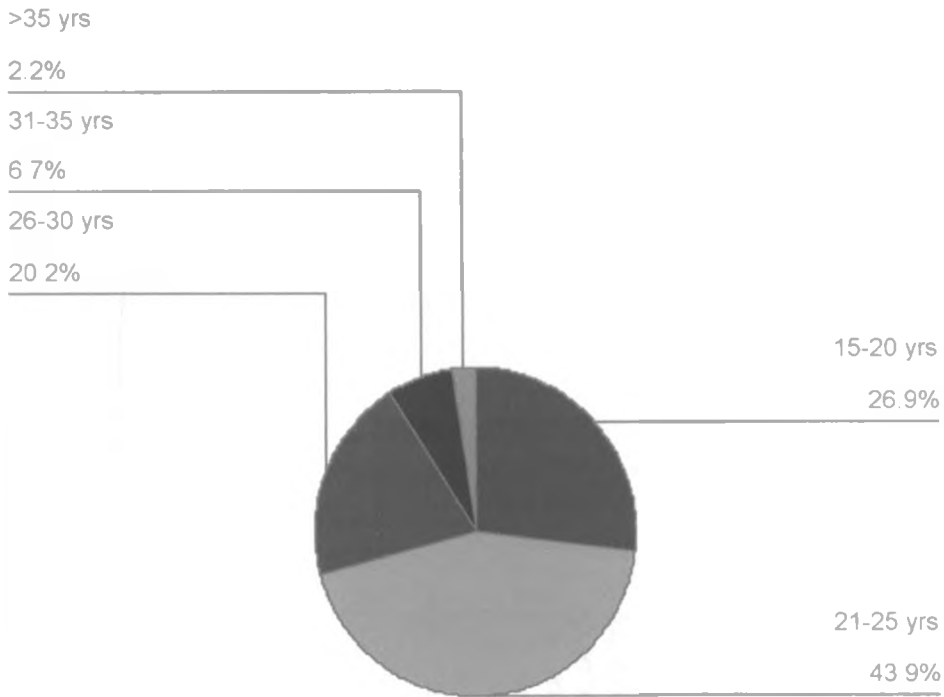


Figure 4: Age distribution of antenatal mothers (n=312).

The respondents were also asked to give the age of their marital partners.

Partners' age ranged from 19–60 years, the upper extreme being represented by only one individual. The mean age was 29.4 years (std dev 5.7). The medial and modal ages were 28 and 25 years respectively. When grouped, about two thirds of the partners belonged to age groups 21-25 years (31%) and 26-30 years (35%).

The accompanying men ranged from age 23 to 43 years with mean, median and modal ages being 29.1(std. dev. 4.9), 28 and 25 years respectively. This is same as the overall age parameters of the partners to all pregnant women.

Correlation analysis of the association between respondents' and their partners' age shows a strong positive correlation ($r=0.785$, $p<0.01$).

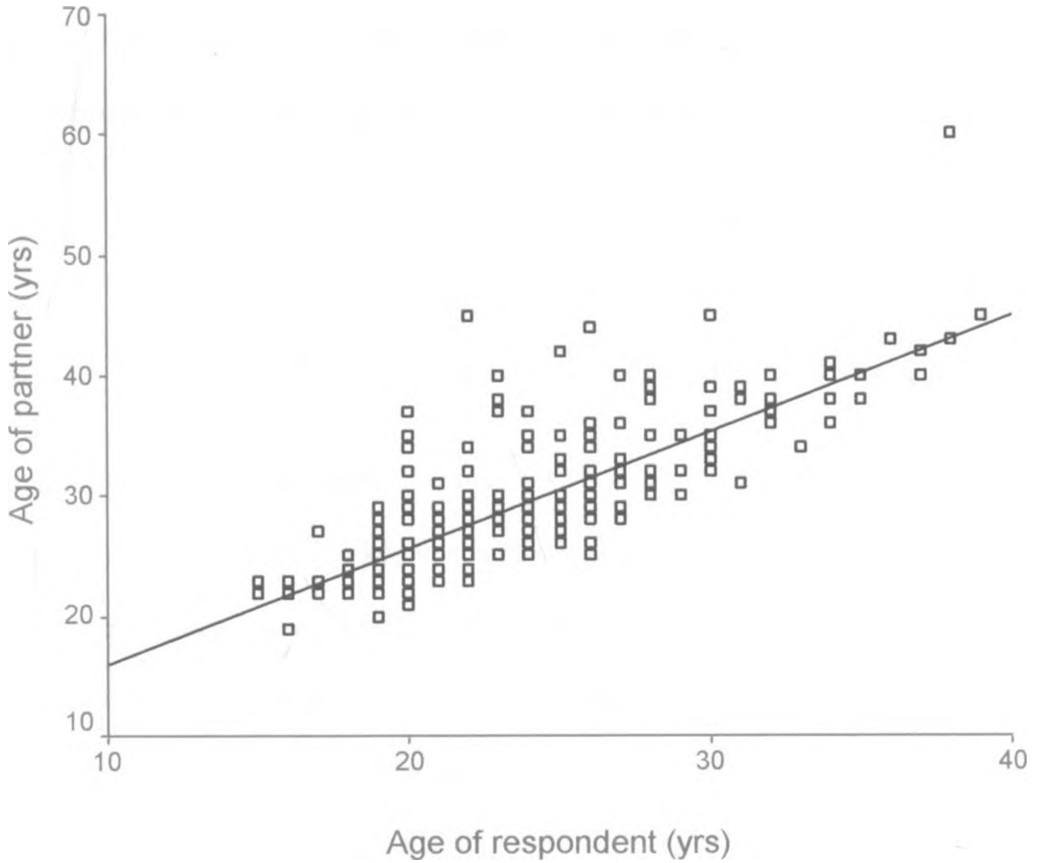


Figure 5: Age correlation between married antenatal mothers and their partners (n=273).

4.1.3: Household headship

About 86 percent of pregnant women live in households headed by their spouses. The rest (14.1%) either live with one of the parents, an aunt/uncle or a sibling.

The frequency distribution of heads of households where the 312 interviewed antenatal mothers live is as shown in Table 3 below.

Table 3: Head of household where antenatal mother is currently living (n=312)

Head of Household	Frequency (n)	Percentage
Husband	268	85.9
Self	5	1.6
Mother/father	19	6.1
Aunt/uncle	7	2.2
Brother/sister	12	3.8
Friend	1	0.3
Total (N)	312	100

4.1.4: Education level of respondents

The married pregnant women were asked to state the highest level of education they and their marital partners had achieved. The findings were as displayed in Table 4.

Educational attainment by the respondents was different from that of their partners.

Majority of the respondents (63.1%) achieved primary school level of education while 33.7 and 3.2 percent attained secondary and post-secondary levels of education respectively. Conversely, majority of their partners attained secondary level of education (58.8%), while primary and post-secondary education accounted for 38.5 and 4.8 percent respectively. Overall, it was observed that male partners had attained higher levels of education compared to their spouses. On statistical analysis (Chi- Square) this observation was significant ($\chi^2 = 49.0$, $df=1$, $p < 0.0001$).

Table 4: Educational attainment of antenatal mothers and that of their partners (n=273)

Education level of antenatal mothers (n)	Education level of partners (n)		Total (N)
	Primary and below	Secondary and above	
Primary and below	93	78	171
Secondary and above	12	90	102
Total	105	168	273

($\chi^2 = 49.0$, $df = 1$, $p < 0.0001$)

4.1.5: Ethnic background of antenatal mothers

When asked to state the ethnic group they belong to, the responses were as shown in Figure 6.

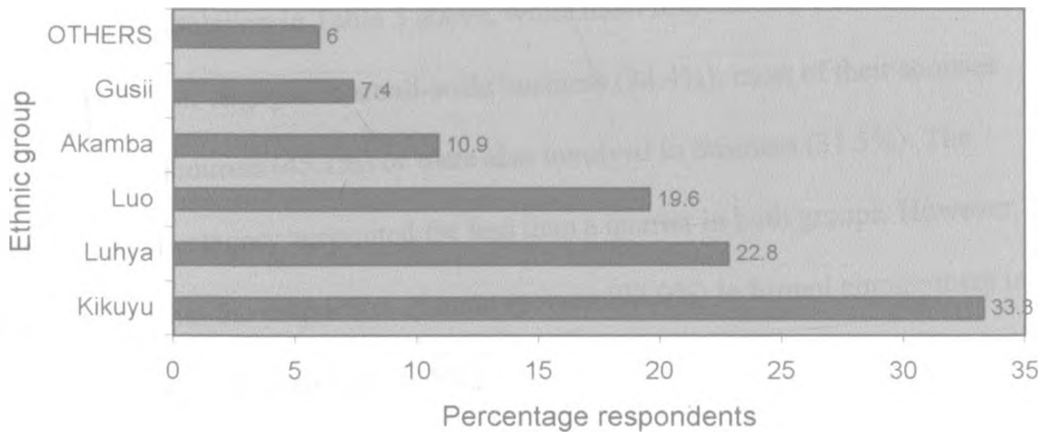


Figure 6: Percentage distribution of ethnicity of antenatal mothers (n=312)

Respondents reported to belong to 13 ethnic groups of Kenya. Majority of the respondents (94 percent) were drawn from the five ethnic groups of Kenya. These were the Kikuyu (33.3%), Luhya (22.8%), Luo (19.6%), AKamba (10.9%) and Gusii (7.4%). The other respondents (6%) were from the Meru, Maasai, Teso, Swahili, Turkana, Kalenjin, Taita and Somali communities.

4.1.6: Occupation

Table 5: Occupation of respondents and their partners (n=273).

Occupation of antenatal mother (n)	Occupation of partner (n)					Total (N)
	Formal employment	Casual labour	Trader/Business	None	Farmer	
Formal employment	3	-	5	-	-	8
Casual labour	2	4	2	1	-	9
Trader/business	13	23	32	1	2	71
Housewife	41	96	46	-	-	183
Student	1	-	1	-	-	2
Total	60	123	86	2	2	273

As shown in cross-tabulation in Table 5 above, while most respondents were either housewives (58.7%) or engaged in small-scale business (24.4%), most of their spouses were either casual labourers (45.1%) or were also involved in business (31.5%). The formal employment category accounted for less than a quarter in both groups. However, it is worthy noting that the proportion of male spouses (22.0%) in formal employment is almost ten times that of their spouses (2.9%).

4.1.7: Reproductive history of antenatal mothers

For the purposes of this study, the reproductive history of the respondent involved determination of the total number of pregnancies (including the current one) ever had, the stage of the pregnancy, and the number of clinic visits.

Number of pregnancies

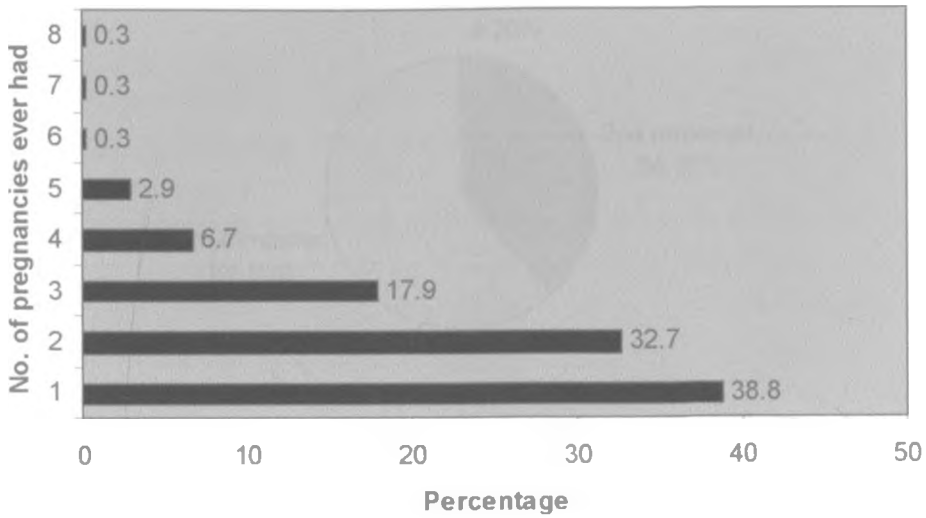


Figure 7: Percentage distribution of number of pregnancies ever had (n=312)

As shown in the Bar Chart above (Figure 7), the interviewed antenatal women ranged from gravida 1 to gravida 8. Gravida 6, 7 and 8 were each represented by one respondent. The medial and modal numbers of pregnancy were 2 and 1 respectively. Overall, gravida 1-3 comprised 89.4 percent of respondents while the rest were gravida 4 and above.

Stage of pregnancy

As shown in Figure 8 below, almost two thirds (61.5%) of the antenatal mothers were in the third trimester of pregnancy. The mothers in the first and second trimesters were 4.2 and 34.3 percent respectively.

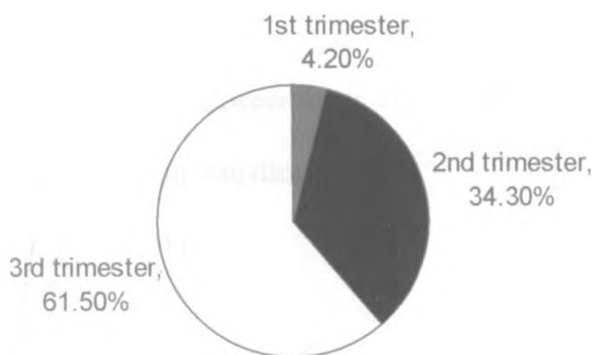


Figure 8: Percentage distribution of antenatal mothers' stage of pregnancy (n=312).

The respondents were also asked to state the order of the ANC clinic visit on the day of interview. Almost 30 percent of the respondents were making their first clinic visit while those making second visit were 23.4%, third visit 24.4% and over three visits 22.4%.

For purposes of statistical analysis, the variables number of clinic visits and stage of pregnancy were transformed to yield two categories each. When cross-tabulated, the new frequencies were as shown in Table 6 below.

Table 6: Frequency distribution of stage of pregnancy and order of clinic visit (n=312).

Stage of pregnancy (n)	Order of clinic visit (n)		TOTAL (N)
	1st visit	2nd visit and above	
2nd trimester and below	59	61	120
3rd trimester	34	158	192
	93	219	312

$(X^2 = 34.9, df = 1, p < 0.0001)$

To determine the observed relationship between stage of pregnancy and order of clinic visit, the Chi-Square test was used. On statistical analysis this observation was highly significant ($\chi^2= 34.9$, d.f= 1, $p<0.0001$).

4.2: FOOD ACQUISITION AND ADEQUACY

The study also sought to determine how the households from which the respondents belong mainly acquire food for consumption. The means of acquiring food and the person mainly responsible for this task can determine whether the woman (and other family members) is nutritionally secure. The above information will also facilitate the analysis of the extent to which the pregnant women are dependent on the marital partner for food in addition to other necessities.

4.2.1: Means of acquiring food

An overwhelming majority (97.8 percent) of the households from which the antenatal mothers live acquire their food through purchasing from the market. Those who obtain food through both purchasing and farm production were 1.9 percent while those who primarily depend on farming were a paltry 0.3 percent.

4.2.2: Decision on food preparation

The interviewers sought to know from the respondents the factors which determine what type of food is prepared for family consumption at any given meal time. A variety of

responses were given and these were classified before data entry into six categories as shown in Figure 9.

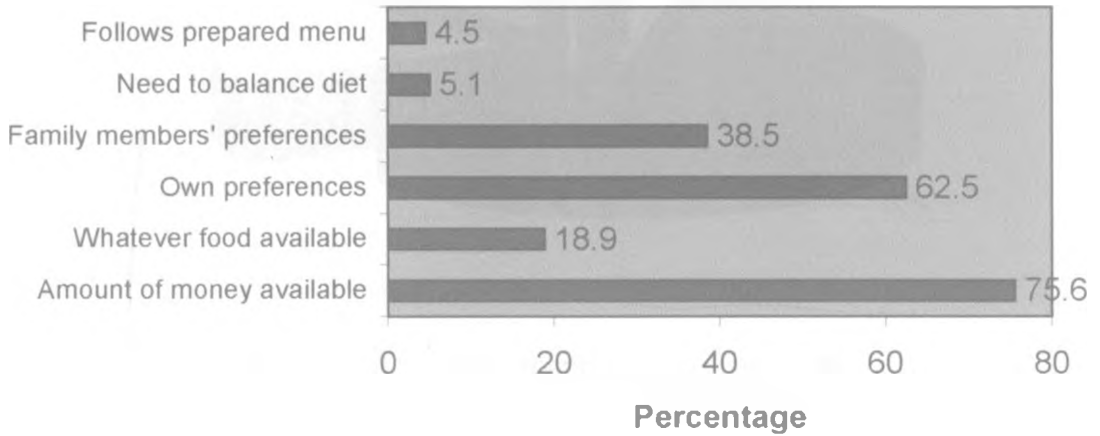


Figure 9: Factors influencing decision on meal preparation (n=312)

From the figure, decisions on what meal to serve is mainly dictated by the amount of money available to purchase food (75.6%), preferences of the pregnant woman who is also in-charge of food preparation (62.5%), and preferences of the other family members (38.5%).

4.2.3: Responsibility for food provision

On the responsibility of obtaining food for household consumption, 63 percent of the 312 respondents said that their spouse is the one who shoulders it. As shown in Figure 10 below, in a considerable number of households (22%), food provision is a shared responsibility between the spouses.

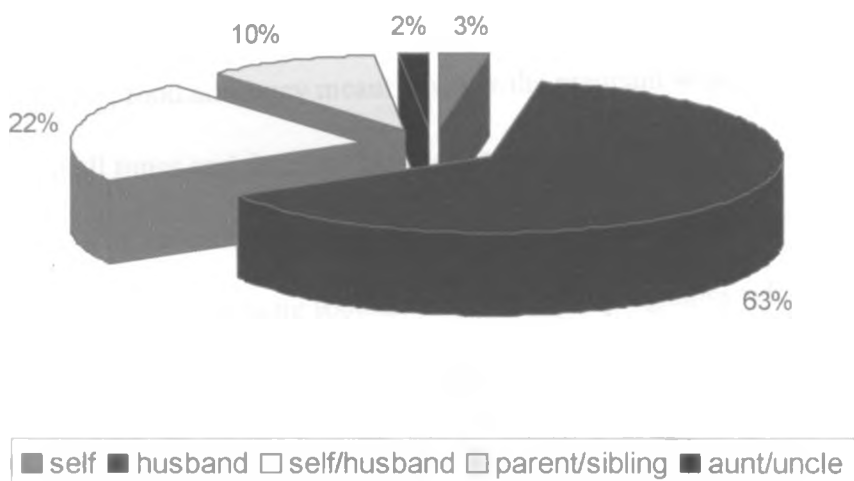


Figure 10: Percentage distribution of persons responsible for food provision (n=312)

A contingency table (Table 7) was constructed to show the relationship between occupation of the respondent and the person responsible for food provision in the household. The table shows that respondents who were either formally employed, casual labourers or involved in small business were less dependent on their partners as compared to their counterparts who were housewives, students or not employed at all

Table 7: Person responsible for food provision and antenatal mothers' occupation (n=312)

Occupation of antenatal mother (n)	Person responsible for food provision (n)					Total (N)
	Self	Husband	Self and husband	Parents/sibling	Aunt/uncle	
Formal employment	1	1	6	1	-	9
Casual labour	3	1	7	6	-	17
Trader/business	4	21	48	2	1	76
Housewife	1	174	8	-	-	183
Student	-	2	-	3	-	5
None	-	-	-	18	4	22
	9	199	69	30	5	312

4.2.4: Food adequacy

For the purposes of this study, food adequacy meant whether the pregnant woman has access to adequate food at all times and does not experience periods of food shortage/scarcity. Out of the 312 antenatal mothers interviewed, 287 (92%) responded in the affirmative that they are having adequate food intake during this pregnancy while 25 (8%) did not. Analysis of whether there was an association between experience of food shortage and occupation of respondents was significant ($\chi^2=11.68, p<0.05$).

Out of the 25 who reported experience of food shortage, 24 (96%) mentioned lack of money at particular times of the month as the major contributing factor while only 1 (4%) mentioned her dislike for commonly available foods as the reason.

To overcome food scarcity, 60 percent of respondents experiencing food scarcity (n=25) resort to borrowing while 20 percent go for the most affordable under the circumstances, and the remaining 20 percent simply go without food.

4.3: MALE PARTICIPATION IN HEALTH AND NUTRITIONAL CARE

Male involvement in health and nutritional care and support of women during pregnancy was assessed through various aspects that included:

- Presence of partners during current visit
- Couple communication on health and nutrition matters
- Respondents' approval of male participation
- Major roles respondents expect men to play as supportive partners
- Respondents' rating of current male involvement
- Current obstacles to male involvement

- Suggested strategies to fully involve men

4.3.1: Presence of partners during clinic visit.

When asked whether their partners accompanied them to the clinic on the day of the interview, only 35 (12.8%) of the 273 married women responded in the affirmative, while 238 (87.3%) were not. Absence or presence of partners in the clinic was not significantly associated with any background characteristic of the respondents ($p>0.05$).

Those who were accompanied ($n=35$) gave the reasons for partner's presence being that the partner was free hence had a good opportunity to know what goes on in the clinic (28.6%); the clinic was far away from place of residence hence need to be accompanied by partner (22.9%); respondent herself insisted on his coming to clinic (8.6%); partner was to pay any contingency bills (11.4%); the partner had his own reasons (17.1%); and lastly the reasons for his coming were not known to respondent (11.4%).

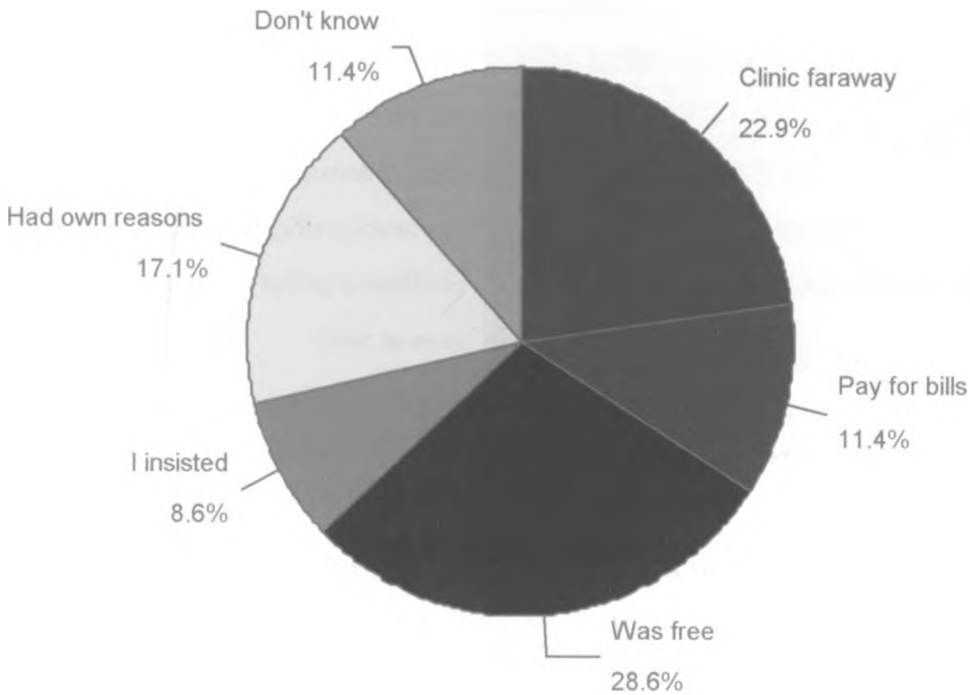


Figure 11: Antenatal mothers' reasons for being accompanied to the clinic (n=35).

The 34 interviewed men who had accompanied their spouses to the clinic gave similar reasons for their coming (Figure 12). The major reason was that the spouse was feeling unwell or tired and hence needed somebody by her side incase anything happens (32.4%). Other major reasons were that it was either the woman's first pregnancy or visit to the clinic hence need for the man to guide her (23.5%), and the man had some enquiries to make concerning the pregnancy (20.6%). In contrast to women's responses, the reasons of the clinic being far away and the man being free were not major since only 17.6 and 14.7 percent of the accompanying men mentioned them as the reasons for their coming.

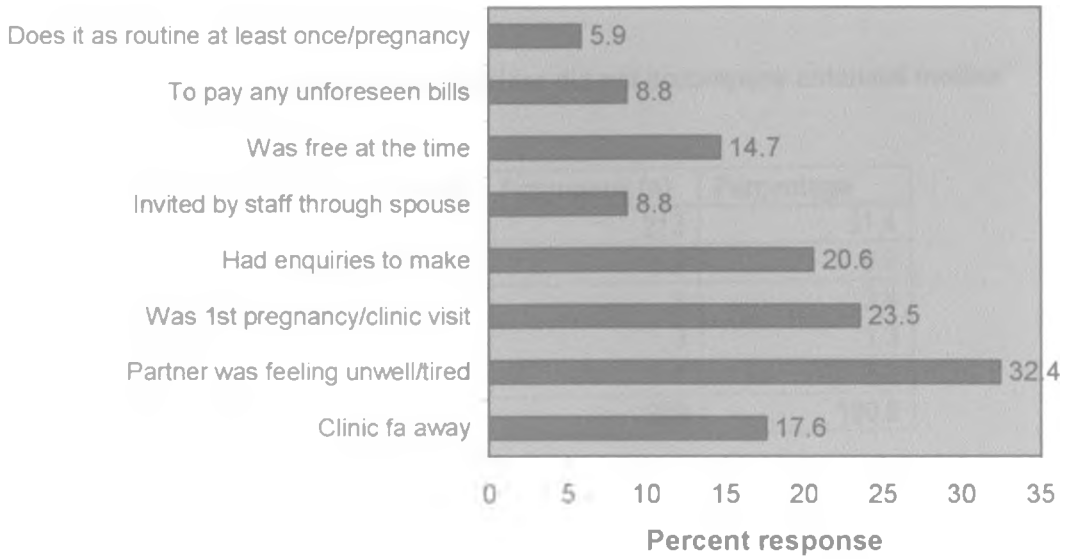


Figure 12: Men's reasons for accompanying spouses to the clinic (n=34)

The 238 who were not accompanied were further asked whether their partners were aware of the current visit, and why they did not accompany them. Of these, 233 (97.9%) responded in the affirmative while only 5 (2.1%) said their partners were not aware of the visit.

For those whose partners were aware of the visit (n=233), the major reasons for not being accompanied were varied, and prominent among them was that the partner was working or occupied in one way or another (91.4%). As shown in Table 8 below, the other reasons were that it is not necessary unless the respondent was sick (3.4%), the respondent did not insist on being accompanied (3.0%), the partner was tired after work (1.3%), and that men view pregnancy as a woman's domain/affair deserving minimal male participation (0.9%).

Table 8: Frequency distribution of reasons why partner did not accompany antenatal mother to the clinic (n=233)

Reason why partner did not accompany woman	Frequency (n)	Percentage
Partner was at work	213	91.4
Men think pregnancy is a woman's affair	2	0.9
Not necessary unless the woman's sick	8	3.4
Partner was tired after work	3	1.3
Respondent did not insist on it	7	3.0
Total (N)	233	100.0

4.3.2: Couple communication on health and nutrition

The married antenatal mothers and the accompanying men were also asked whether there are instances during which they engage in discussions with their partners on matters relating to health and nutrition during pregnancy. Out of 273 respondents, 137 (50.2%) responded in the affirmative while 136 (49.8%) reported absence of such discussion. On the other hand, a very high proportion of interviewed men (79.4%, n=34) reported presence of discussion.

To determine whether the presence or absence of inter-spousal communication was associated with some characteristics of the pregnant women and their partners, the χ^2 test was performed. The χ^2 test was significant for associations between presence of couple communication and whether the respondent was accompanied to the clinic, and status of male partner's awareness of the current visit for those not accompanied ($p < 0.05$).

The 137 pregnant women who responded in the affirmative were further asked to report the health and nutrition issues they discuss with their partners. The responses were as shown in Figure 13 below.

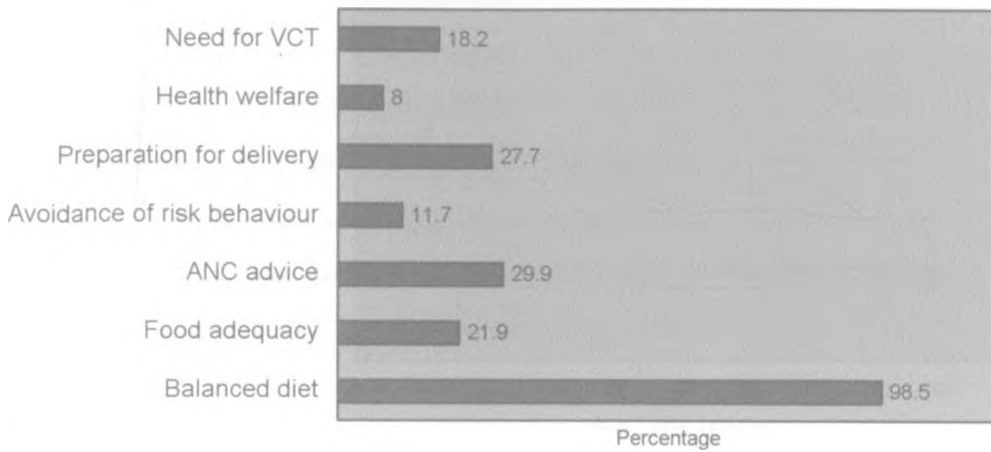


Figure 13: Health and nutrition issues discussed (n=137)

Over 98 percent reported having discussed issues relating to balanced diet during pregnancy. Other issues reported as having been discussed are health and nutrition advice given in the clinic (29.9%), preparation for delivery and baby arrival (27.7%), need for adequate food intake (21.9%), and need for both couples to undergo VCT for HIV/AIDS (18.2%).

On analysis, the χ^2 -test was significant for the association between presence of couple discussion on health and nutrition advice given in the clinic and the age of the partner ($p < 0.05$). Significant test results were also recorded between discussions on avoidance of risk behaviour and whether respondent was accompanied to the clinic; need for VCT by both partners and ethnicity; and lastly, discussion on need for both partners to undergo VCT and order of clinic visit ($p < 0.05$).

Likewise, the 27 accompanying men who reported presence of couple communication were asked to report the health and nutrition issues discussed and the responses were shown in Figure 14.

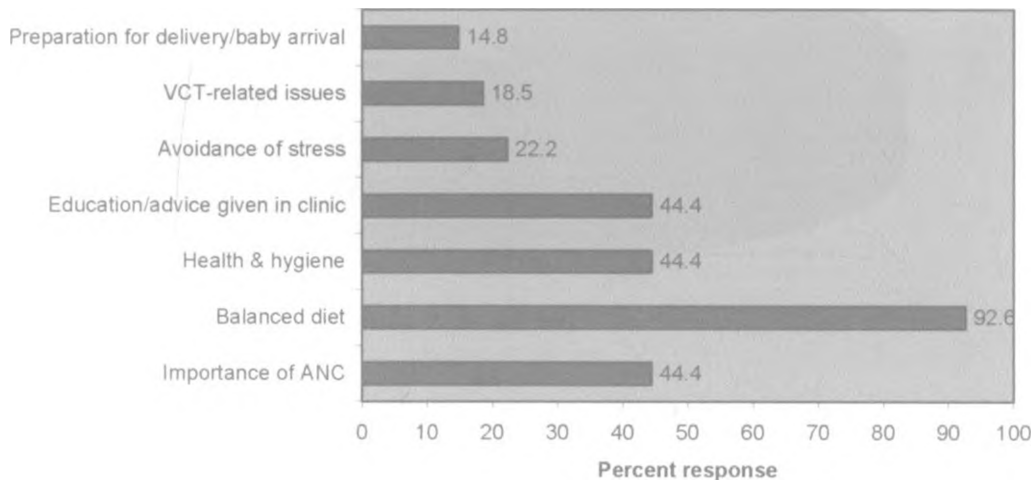


Figure 14: Issues accompanying men reported to have ever discussed with their spouses (n=27).

In reference to the pie chart shown below (Figure 15), 136 of the pregnant women who reported absence of discussion with their spouses gave a number of reasons as to why they do not discuss. Prominent among them was that there is no need to discuss so long as the pregnancy is progressing well (54 percent). Another 20 percent did not know the reasons why they don't discuss, 15 percent reported that the men are neither available nor willing to discuss, while 11 percent said pregnancy is a woman's issue that should attract minimal male involvement.

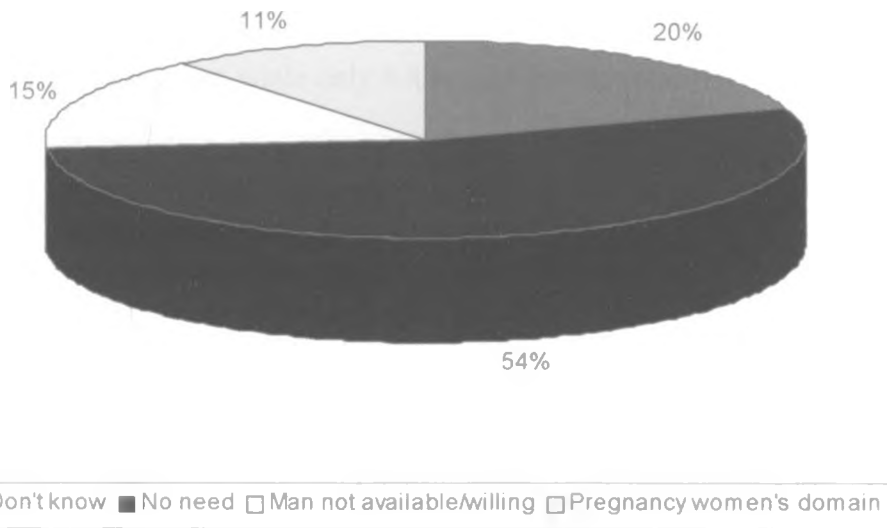


Figure 15: Antenatal women’s reasons for not discussing health and nutrition with their partners (n=136)

On analysis, the χ^2 -test showed significant associations between the age of respondents and reasons as to why there is no couple discussion of health and nutrition issues relating to pregnancy ($\chi^2=23.0, p<0.05$). When compared to younger antenatal mothers, most respondents in higher age groups stated that there is no reason to discuss so long as the pregnancy is progressing well

4.3.3: Acceptance of male involvement

In an attempt to gauge the pregnant women’s and accompanying men’s attitude towards male involvement, the interviewers required them to rate their approval. All pregnant women were to respond irrespective of their marital status.

A big proportion of the pregnant women (97.4 percent) said they approve of the idea of getting men actively involved, while those who did not approve or were unsure represented only 1.3 percent each. Likewise, the proportion of accompanying men who approved was 88.2 percent, while only 8.8 and 2.9 percent respectively did not approve or were unsure/had no opinion (n=34). The distribution of percentage approval by antenatal mothers is as shown in Figure 16 below.

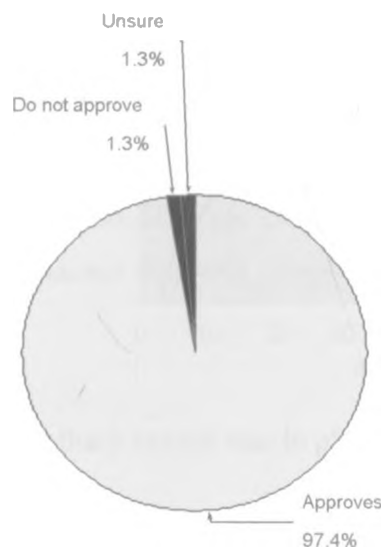


Figure 16: Percentage distribution of antenatal mothers' approval of male involvement (n=312)

To determine whether the levels of approval differ depending on the background characteristics of the pregnant women, a non-parametric test was used. The Kruskal Wallis test was used to test the null hypothesis that levels of approval were not different between the various categories of respondents. The differences were only statistically significant for educational level of the pregnant women ($p < 0.05$).

4.3.4: Roles expected of men

Interviewers asked respondents about the main roles and responsibilities they expect men to play in meeting health and nutritional needs of women during pregnancy. The 312 respondents were expected to generate the forms of care and support spontaneously.

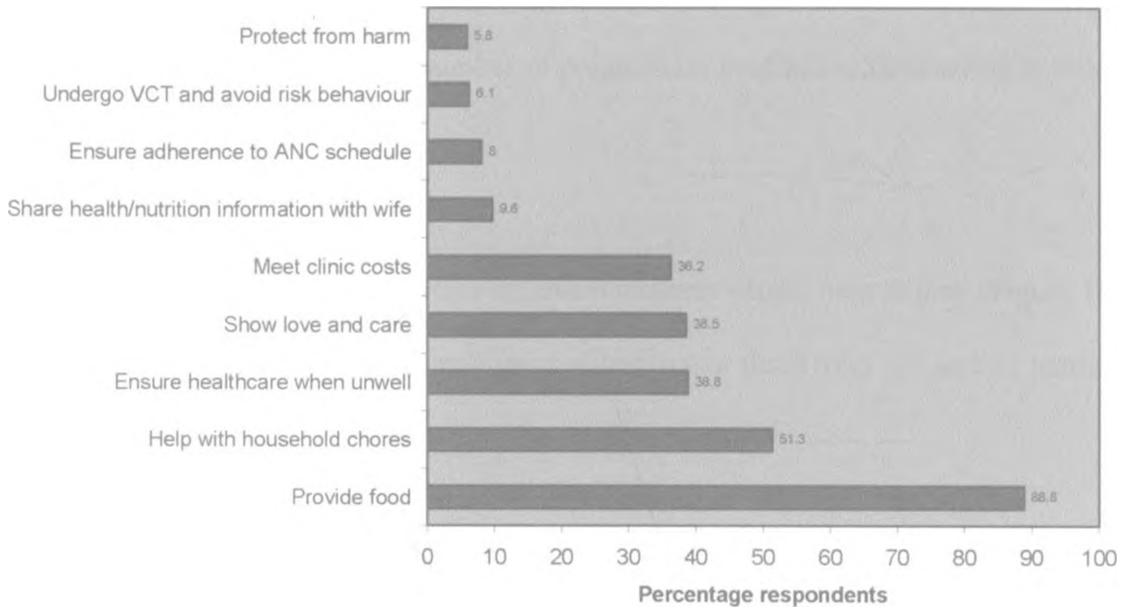


Figure 17: Roles antenatal mothers expect men to play (n=312)

As can be seen in Figure 17, food provision was the role most expected (88.8 percent) followed by assisting with household chores (51.3 percent), and meeting health care requirements incase of sickness (38.8 percent).

The χ^2 - test was performed to determine whether there were statistically significant associations between roles expected and the background characteristics of the pregnant women.

The expectation of food provision as a major role men should play was significantly associated with the level of education of the respondents and site of interview ($p < 0.001$).

Likewise, expectation of men to assist pregnant women with household chores was significantly associated with number of pregnancies ever had and site of interview ($p < 0.05$).

Other significant associations were between sites of interview with ensuring adherence to ANC schedule and sharing of health and nutrition information; marital status with payment/meeting clinic costs; and number of pregnancies ever had with ensuring health care when sick ($p < 0.05$).

The distributions of the number of roles antenatal mothers expect men to play (Figure 18) shows that majority of the respondents expect either two or three roles (33 and 31 percent respectively).

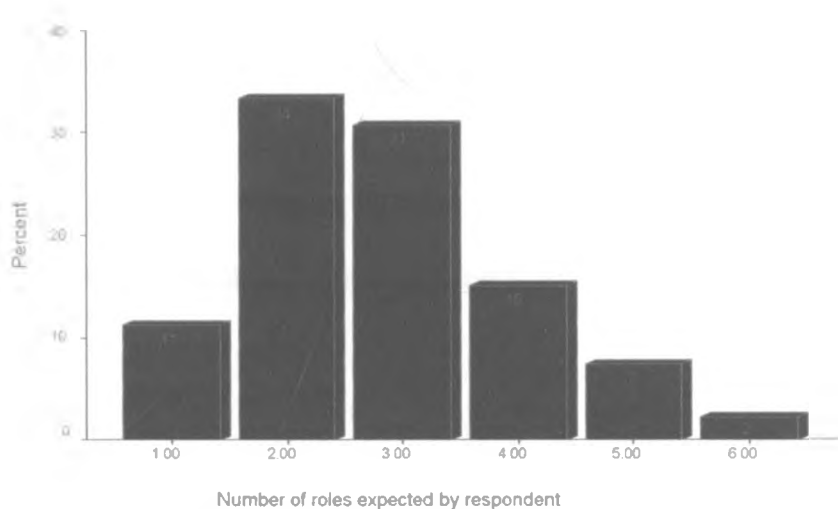


Figure 18: Percentage distribution of number of roles expected by antenatal mothers (n=312).

To test the null hypothesis (H_0) that there were no differences in the number of roles expected between the different background characteristics of the respondents, the One-way ANOVA (between-group and within-group analysis of variance) test was performed.

Overall, the F- statistics yielded were statistically not significant ($p>0.05$) meaning the number of roles expected did not significantly differ across different demographic and socio-economic categories of the pregnant women.

According to interviewed accompanying men who approve of male involvement ($n=30$), the major roles men should play towards ensuring optimal health and nutrition for pregnant women were as shown in Figure 19.

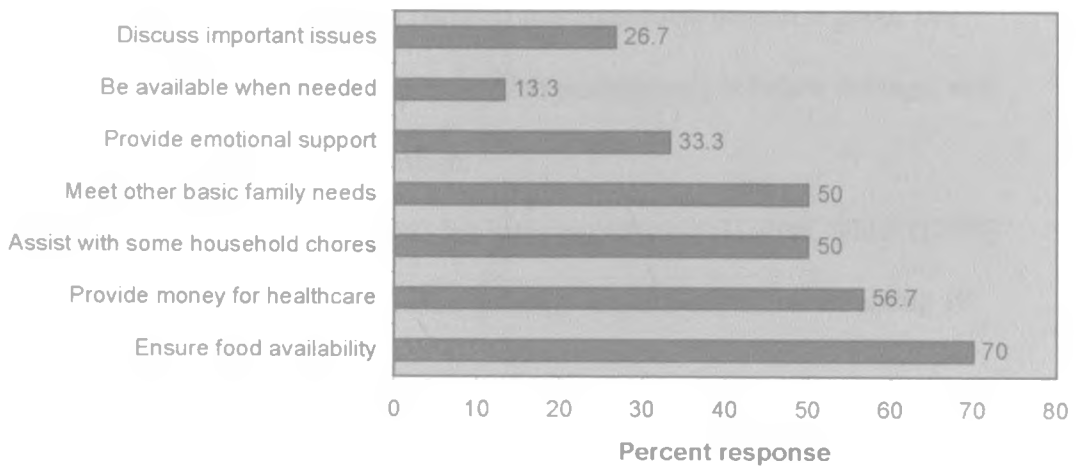


Figure 19: Roles men should play according to accompanying men ($n=30$)

4.3.5: Rating of current male involvement

The respondents were asked to report on their rating of current male participation in health and nutritional care and support of women during pregnancy and the responses were as shown in Table 9 below.

Table 9: Frequency distribution of rating of current male participation by antenatal mothers (n=312) and accompanying men who approve of male involvement (n=30)

Rating	No. of Antenatal Mothers (n)	No. of Accompanying Men (n)
Good	95 (30.4%)	19 (63.3%)
Average	169 (54.2%)	6 (20%)
Below Average	44 (14.1%)	2 (6.7%)
No Response	4 (1.3%)	3 (10%)
Total (N)	312 (100%)	30 (100%)

Out of the 312 pregnant women, 95 (30.4 percent) felt male participation is good, 169 (54.2 percent) felt it is average, 44 (14.1 percent) felt performance is below average, and 4 (1.3 percent) did not respond to the question.

For accompanying men (n=30), 19 (63.3%) felt male participation is good, while 6(20%) and 2(6.7%) described it as average and below average respectively. The remaining 10 percent did not respond to the question.

To test the null hypothesis that there are no differences in rating across socio-demographic characteristics of pregnant women, Kruskal-Wallis test was performed. The observed differences were statistically significant for ethnic group and educational level of respondents, and the site of interview ($p < 0.05$). Women who had attained high level of education appeared to rate men less favourably as compared to those who attained lower levels of education.

4.3.6: Current obstacles to male involvement

The interviewers also asked the antenatal mothers to mention the reasons they feel make men not to be actively involved in the health and nutritional care of their spouses during pregnancy. Several responses were spontaneously given and similar ones were integrated before data entry (Figure 20).

Over half of them (56.4 percent) felt that financial constraints are a contributing factor. Other factors mentioned were a belief that pregnancy is a woman's domain not requiring too much male 'interference' (37.2 percent), adoption of 'don't care' attitude by men (36.5 percent), lack of information and sensitisation on importance of male involvement (30.4 percent), men's tight work schedules (28.5 percent), and development of couple misunderstandings during pregnancy (18.3 percent). Other factors with percentage responses below 10 are as shown in Figure 20.

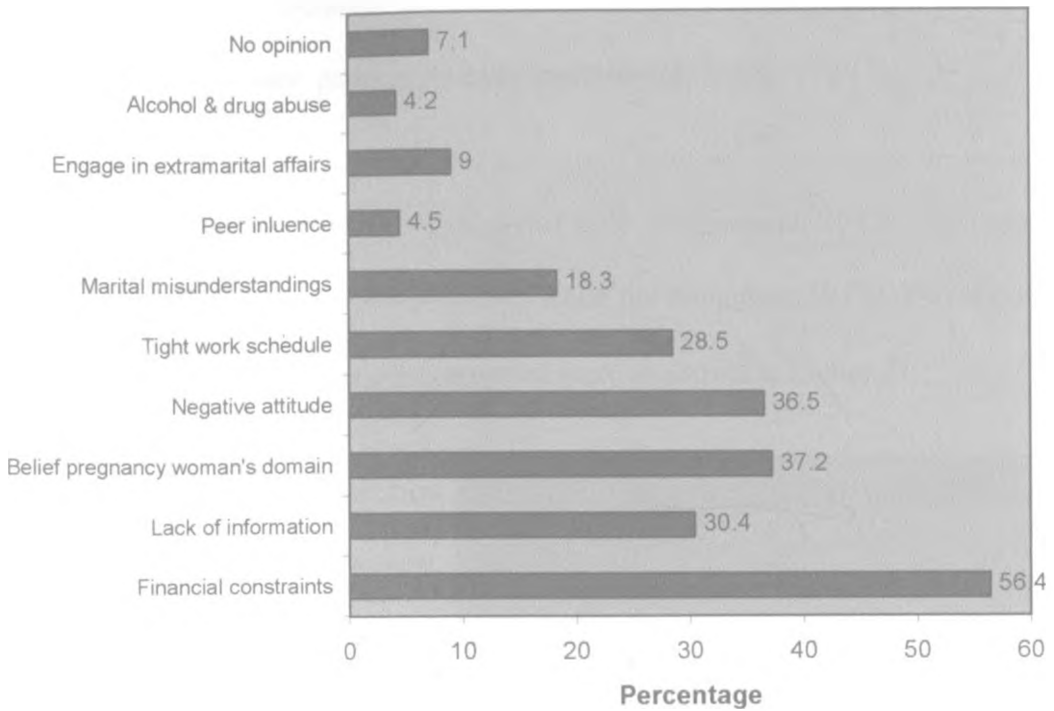


Figure 20: Obstacles to male involvement according to antenatal mothers (n=312)

To determine existence of associations between the above obstacles to male participation and socio-demographic characteristics of pregnant women, the χ^2 test was performed.

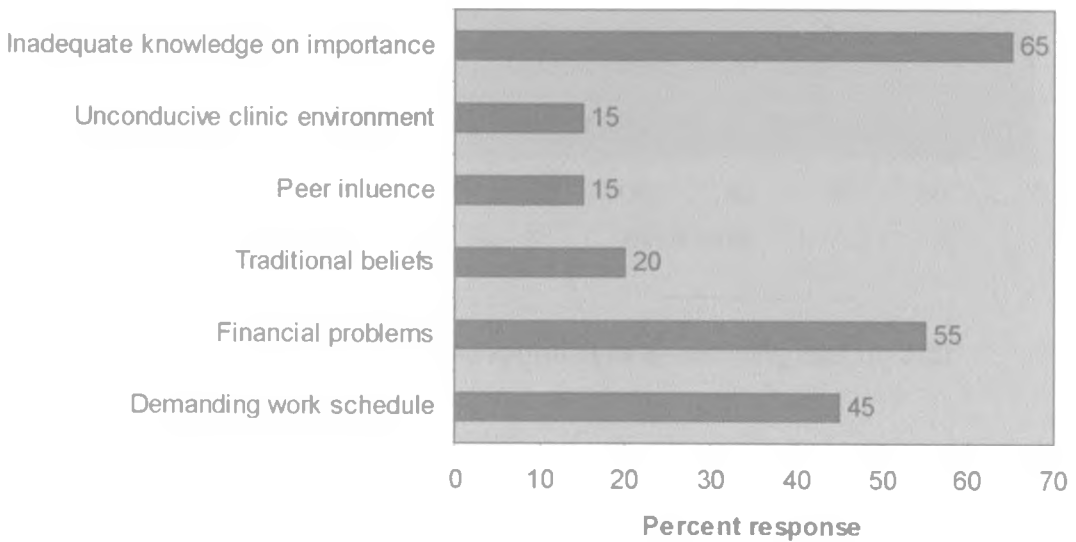
Financial constraints were significantly associated with the study site where the interview was conducted ($p < 0.05$).

The association between men developing a 'don't care' attitude towards pregnant women was significant for occupation of the pregnant women ($p < 0.05$) and educational level of the partner ($p < 0.001$).

Significant associations were also found between the obstacle of tight work schedules with partner's level of education ($p < 0.05$) and site of interview ($p < 0.001$).

The other significant association was between the obstacle of men being influenced/misled by their peers and site of interview ($p<0.05$).

Out of 30 accompanying men who approve of male involvement, 20 (66.7%) reported existence of obstacles to male involvement, while the remaining 10 (33.3%) said there are no such obstacles. The obstacles reported were as shown in Figure 21.



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Figure 21: Obstacles to male involvement as reported by accompanying men (n=20)

4.3.7: Suggested strategies to promote male involvement

The interviewers also required the antenatal mothers and the accompanying partners to mention what they thought should be done to facilitate active male involvement in health and nutritional care and support of women during pregnancy. This was an open question that required the respondents to spontaneously give a suggestion(s). The responses given

were compared and categorized before data entry. They were as shown in Figure 22 below.

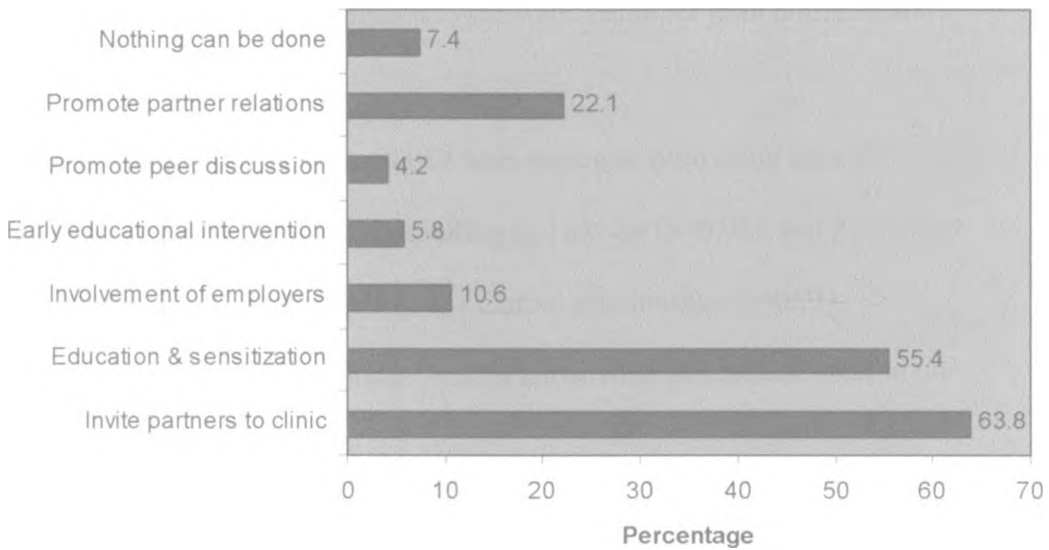


Figure 22: Pregnant women's suggested approaches to involving men (n=312)

The commonly suggested strategies were to invite men to accompany their pregnant spouses during ANC visit so that they can jointly receive education, advice and counselling (63.8 percent), and mounting of public education campaigns through means like home visiting (55.4 percent). Other suggested strategies are as shown below.

To determine whether there was an association between the suggested strategies and the background characteristics of the respondents, the χ^2 -test of association was performed on contingency tables of the suggested strategies and selected socio-demographic characteristics of the respondents. On analysis, only four respondent attributes (education level, age, number of pregnancies ever had, and site of interview) showed statistically significant associations with some of the strategies mentioned by the respondents.

The antenatal mothers' level of education was significantly associated with the strategy of inviting men to accompany their spouses to the ANC clinic for joint nutrition and health counselling ($p < 0.05$).

The age attribute was significantly associated with strategies of inviting men to accompany spouses to clinic for joint counselling and advice ($p < 0.05$), and promotion and improvement of couple understanding in a marital relationship ($p < 0.01$).

Age was also significantly associated with lack of knowledge and lack of opinion on what should be done to promote male involvement in nutrition and health care and support of women during pregnancy ($p < 0.001$ and $p < 0.05$ respectively).

The number of pregnancies ever had was significantly associated with strategies of mounting public education and sensitisation campaigns ($p < 0.05$), and promotion and improvement of couple understanding in marital relationships ($p < 0.001$). The association between number of pregnancies and lack of opinion on what should be done was also significant ($p = 0.005$).

The study site where the interview was conducted was significantly associated with strategy of parental guidance of men from their childhood ($p < 0.05$), while it was highly significant with mounting of public education and sensitisation campaigns strategy ($p < 0.001$).

For the accompanying men who reported existence of obstacles ($n = 20$), the suggested strategies were fewer (4) compared to those by the antenatal mothers. The strategy

commonly reported by the men was sensitisation of men through education campaigns in the community, workplace and public gathering places (85%). This was closely followed by the strategy of men being offered conditions of work and terms of payment (75), while improving the hospital environment to encourage men to accompany women accounted for only 10 percent. One respondent (5%) had no opinion on what should be done. The percentage responses are as illustrated in Figure 23 below.

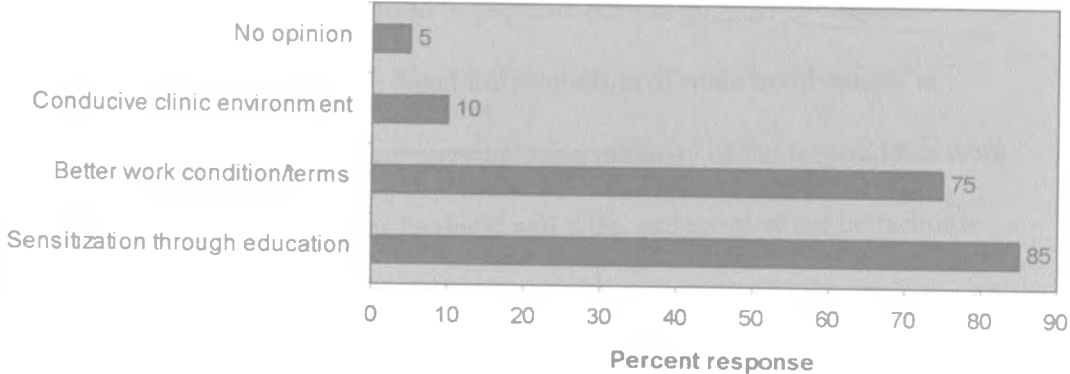


Figure 23: Accompanying men's suggested strategies to promote male involvement (n=20)

Chapter 5: DISCUSSION OF THE RESULTS

5.1: SOCIO-DEMOGRAPHIC PROFILE

As expected, majority of the women seeking antenatal services were young with almost 71% aged between 15 and 25 years of age. On the other hand, over half of partners to those who were married were aged between 19 and 29 years. This means the couples are in their early reproductive years hence need to promote partner support to ensure uneventful pregnancy and childbearing. Need for promotion of male involvement is further reinforced by the findings that an overwhelming majority of the respondents were married or living together with a man as husband and wife, and most of the households were male (husband) headed.

There were variations in education attainment and occupation between respondents and their partners. The male partners had attained higher levels of education compared to their female spouses. This has implications in terms of employment opportunities and, therefore, economic independence and access to better health and nutrition for the woman and other members of the household. This is reflected in the proportion of respondents who were housewives and thus dependent on their male partners as the main providers of food and other necessities.

Lower education level may also limit the pregnant women's exposure to reproductive health and general information hence reliance on the relatively better educated partner for such information. In the 2003 KDHS relationship between education attainment and exposure to information through the mass media is well illustrated. For example, women

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with no education or some primary education were less likely to have access to some form of media as compared to those with secondary and tertiary education (CBS, 2004).

Given the age of majority of the respondents, almost three quarters were between gravida 1 and 2. This showed that they were just almost halfway through their reproductive cycle given that the current total fertility rate in Kenya is 4.9 children per woman. Furthermore, most of the respondents were in their third trimester of pregnancy but had just made one or two clinic visits. These findings correspond to those of 2003 KDHS where most women do not seek ANC early in pregnancy, and less than half of them pay four or more clinic visits as recommended by health professionals. This is likely to endanger the mother's health in case there is an underlying health and/or nutrition problem that needs early detection and intervention.

The above findings justify promotion of male involvement in reproductive health issues with the goal of promoting use of contraception (for child spacing and limiting) and early attendance and adherence to clinic schedule to avoid health and nutrition complications through early detection and intervention.

5.2: HOUSEHOLD HEADSHIP AND FOOD PROVISION

An overwhelming majority of the respondents live in male-headed households where, again, the responsibility of food acquisition for household consumption is mainly the man's. This should be expected given that majority of the respondents were married or living together with a man in a marital relationship. As pertains men being the sole breadwinners among most respondents, the findings are not surprising since most

respondents were housewives hence dependent on men who were mainly engaged in casual labour. These findings reinforce the need to actively involve men in assuring optimal nutrition and health of women especially during pregnancy and lactation besides other periods in a woman's life cycle.

However, although husbands were the main breadwinners, the decision on which food to prepare and serve was mainly dictated by the amount of money available for food purchase and the preferences of the respondents who also happen to be in-charge of food preparation. The need to balance diet as a determining factor of what food to prepare was not prominent among most respondents. This is so despite the importance of preparing and serving a balanced diet in relation to improving the nutritional status of the respondents and other family members.

5.3: Male participation

5.3.1: Partner presence during visit

Presence of male partners during women's visits to ANC clinics provides an opportunity for both partners to receive counselling and advice on health and nutrition matters.

Findings by Mullick et al (2005) in an operation research illustrated that joint couple counselling during ANC visits has an array of benefits. Some of the positive outcomes demonstrated in that study were that male partners showed more interest in their spouses' welfare; couples said they were reminded of what they did not know; men said they learnt what to do and not to do during spouse's pregnancy; male partners' lifestyles changed for the better; and partners became more helpful and supportive.

Despite the above demonstrated benefits of men accompanying women to the clinic, over 87 percent of married respondents in this study (n=273) were not accompanied by their male spouses. This was so despite the men being aware of the scheduled visit. These findings of the study compare with those by Muia et al (2001) where only 13 percent of respondents seeking antenatal care were accompanied.

There were no statistically significant associations between the reasons for non-accompaniment to the clinic and socio-economic and demographic characteristics of the pregnant women interviewed. The reason given by most respondents for not being accompanied was that the partner was working or occupied in one way or another (89.5%). This corresponds with the finding that most partners to respondents were engaged in a variety of income generating activities. Therefore most respondents felt that so long as the partner contributes financially, there is no need for his presence unless very necessary (3.4%). This could also explain another reason that the respondent did not insist on partner presence as a cause for non-accompaniment (2.9%). These reasons for absence of partner compare with the findings by Muia et al. (2001) where 71.1 percent of unaccompanied women said the man was working, 10.4 percent said man thought it was not necessary, and 8.6 percent of the women said they themselves did not insist on being accompanied.

For the very few women who were accompanied, not very good reasons were given for their accompaniment. For example, majority said that they were accompanied because the partner was free and doing nothing at home, while others said the clinic was far away

ence need for escort. Lastly, it was necessary for the man to be present to pay clinic bills. None of them demonstrated knowledge that the male partner needs to be around so that they jointly receive counselling, advice and education on matters relating to adequate health and nutrition during pregnancy.

3.3.2: COUPLE COMMUNICATION

In this study, the proportions of respondents who reported presence and absence of some form of inter-spousal communication regarding health and nutrition during pregnancy were roughly equal (50.2 and 49.8 percent respectively). These findings are different from those by Mishra et al. (2002) in an operation research study involving pregnant women and their husbands in New Delhi (India) where over 75 percent of women interviewed reported discussing maternity care and plan for delivery with their husbands.

In this study, those women whose partners were aware of and accompanied them to the clinic reported significantly higher frequency of inter-spousal communication than those not accompanied. This should be expected because in most cases communication is likely to precede the act of a man accompanying the spouse to the clinic. On the other hand, the women did not differ significantly based on the different categories of attributes like age, education, occupation, ethnicity, number of pregnancies ever had, stage of pregnancy, or the occupation and education level of their partners.

Couple communication on RH matters in general and nutrition and health in particular is an important indicator of male participation because it offers an opportunity for couples

to share their concerns and fears (if any) about the progress of the pregnancy, and make decisions about current and future reproductive plans.

Through such communication, the problems the woman might be experiencing come onto the fore, and both partners reach a consensus on what course of action to take to address the situation. Involvement of men in such discussions is also an indicator of his concern and readiness to offer support to the wife whenever needed.

In this study, the issues most respondents reported as having discussed were the importance and need for balanced diet, and health and nutrition advice given in the clinic. Very few respondents discussed issues like need of the male partner to avoid risk behaviour and undergo VCT yet in this era of STIs including the dreaded HIV/AIDS these issues are very important in relation to the mother's health and nutrition and the outcome of the pregnancy. This finding is similar to the Indian study (Mishra et al, 2002) where only 8 percent of the women reported to have ever discussed the two issues with their husbands. It is also notable that family planning was not reported as one of the issues discussed yet it has major influence on women's health and nutrition. This is in sharp contrast to the other studies where at least 50 percent of the respondents reported having discussed child spacing and limiting with their partners (Muia et al, 2001; Mishra et al., 2002; and Kunene, 2003).

In the analysis it was found that discussions on health and nutrition advice given in the clinic are significantly associated with age of the partner. The nature of the association is that many women whose partners belong to age groups 21-25 and 26-30 years discuss

this issue more often as compared to the older age groups. This could be that these are young couples who have just commenced family life hence need for communication on an important issue as health and nutritional well-being during pregnancy. Other significant associations were between discussion on need for all partners to undergo VCT and the ethnicity of and order of clinic visit by the respondents. For ethnicity, women belonging to the Luo community discussed this issue more than those from other communities for reasons that remain unclear. The women who were making their first clinic visit were also more likely to discuss VCT than the others. This could be because of the counselling they undergo during the first visit.

5.3.3: APPROVAL OF MALE INVOLVEMENT

In this study almost all women interviewed (98 percent) said they approve of the idea of involving men. The approval by men (88.2%) was slightly lower when compared to women.

These findings are in agreement with other findings where rates of acceptance of male involvement by women interviewed were at least 90 percent (Muia et al., 2001 and Mullick et al., 2005).

Although majority of the women in this study showed overwhelming approval irrespective of their educational level, it was found that a significant proportion of the few who did not approve and/or were unsure had achieved secondary level of education. Overall, basing on this and other studies, it is clear that both women and their partners are likely not to be an obstacle to any programme that seeks to involve men in reproductive health in general and health and nutrition care and support during pregnancy in particular.

5.3.4: CARE AND SUPPORT EXPECTATIONS FROM MEN

A high percentage of women thought that food provision is the major role men should play as far as health and nutritional care and support of pregnant women is concerned. This should be expected given that most women interviewed are housewives and the major means of acquiring food for household consumption is by purchasing since practice of farming is not possible. Another major role men should play was that of assisting with household chores like fetching water and carrying of heavy loads.

The expectation of men to play the role of food provision was associated with educational level of respondents. Expectations were higher among women with primary level of education (92.3 percent) than those with secondary and tertiary education (86 and 50 percent respectively). Such expectations were also higher at Langata site compared to the others. This can be attributed to the finding that more women interviewed at Langata had lower levels of education when compared to the other sites.

5.3.5: RATING OF MALE PARTICIPATION

Over half (54.2%) of the pregnant women interviewed feel that men's participation in health and nutritional care is just average. A significant proportion (14.1%) felt the participation is below the average of what they expect. This is in contrast to men whereby almost two thirds (63.3%) report that they are performing satisfactorily in caring for and supporting women during pregnancy. This may be an indication that women feel there is a deficit as far as their care and support expectation from men is concerned. On the other hand, men feel they are doing the best given their socio-economic circumstances.

5.3.6: OBSTACLES TO MALE INVOLVEMENT

The findings of the study indicate that there exist obstacles to male involvement. For men to be effectively involved, these obstacles have to be overcome. As reported by both the antenatal mothers and the accompanying partners, the major obstacles relate to lack of or inadequate information for men concerning the importance of active male partner involvement. Another notable factor is that men have very little time due to their demanding work schedules. This is not surprising since most of the partners to antenatal mothers interviewed are employed as casual workers- an occupation where there are no favourable terms of work like offs and leaves. Another obstacle, which is work-related, is that men lack enough money to meet all needs of pregnant women. This is also true since most casual workers are entitled to meagre incomes which cannot adequately meet all the basic needs- leave alone meeting the extra needs posed by the pregnancy state.

Another notable obstacle reported by accompanying men is that the current health facility environment is not conducive enough in terms of privacy to attract men to accompany their spouses to the clinic so that they receive joint education and counselling. This finding is similar to those by Muia et. al (2001) where health staff demonstrated negative attitude to some aspects of male involvement, and the MCH clinic not offering privacy for joint couple counselling and education. Cultural influences (pregnancy being viewed as a woman's affair), was reported as a major obstacle to male involvement by the antenatal women but not the accompanying men.

5.3.7: SUGGESTED STRATEGIES TO EFFECTIVELY INVOLVE MEN

The most prominent strategy to secure active male involvement was that there is need for men to be sensitised through education at such venues like the workplace, in the community, in the clinic and other public gathering places. Most of the pregnant women suggested that health staff should invite men to accompany their spouses to the antenatal clinic so that they jointly receive health and nutritional education, advice and counselling. According to Mullick et al. (2005), inviting men to the clinic for joint counselling is an effective strategy in promoting women's utilization of reproductive health services and making men to become more supportive partners.

Another prominent strategy suggested by men is that the working conditions and terms of work need to be improved to allow men offs and enough money to meet the needs of the pregnant women.

Chapter 6: CONCLUSIONS AND RECOMMENDATIONS

6.1: CONCLUSIONS

- The pregnant women attending antenatal clinic in urban low income areas of Nairobi are of lower levels of education compared to their partners, and are not engaged in income earning occupations. Hence they almost wholly depend on their partners for their health and nutritional needs.
- Currently, men are not adequately involved in health, nutritional care and support of women during pregnancy. For the roles women expect, they think their partners are only performing averagely in meeting them.
- The idea of actively involving men in health and nutritional care and support of women during pregnancy has full approval and acceptability of antenatal mothers and the partners accompanying them to the antenatal clinic.
- The roles pregnant women expect their partners to play are similar to those the partners think they should play in caring for and supporting women during pregnancy. Types of roles women expect are mostly influenced by the women's level of education.
- The obstacles to male involvement in health and nutritional care and support of women during pregnancy are cultural beliefs, men's tight work schedules, financial constraints, inadequate knowledge on importance, and development of marital strains during pregnancy.

6.2: RECOMMENDATIONS

1. Designing and implementing of an education programme targeting to sensitize and educate men on reproductive health issues in general, and health and nutritional matters during pregnancy in particular. The programme can be workplace-based, health facility-based, at household and community level, through mass media campaigns, and to youth in schools and colleges. This should be done after a needs assessment to address men's fears and concerns.
2. Need for government and the employment sector, public and private, to formulate and implement a policy that will clearly guide the terms and conditions of service particularly in the organizations that employ on casual basis.
3. Women from low-income household should be supported and facilitated to initiate income-generating activities that will boost their incomes and reduce dependency on the partner's meagre earnings.
4. This study recommends further studies in this area to target men at the work and social places, antenatal mothers attending clinic at high cost private health facilities, rural men and women, and the youth.

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Appendix I: Sample Questionnaire

INVOLVEMENT OF MEN IN HEALTH AND NUTRITIONAL CARE AND SUPPORT OF WOMEN DURING PREGNANCY

QUESTIONNAIRE I

(FOR MOTHERS ATTENDING ANTENATAL CLINIC)

Questionnaire No.: _____

Health Facility: [] (1= Ngara, 2= Riruta, 3 Langata)

Interviewer/Enumerator: _____

Interviewee's Clinic Number: _____

Date of Interview: _____ / _____ /2005.

MARITAL STATUS: []

1= Single, 2= Married monogamous, 3= Married polygamous, 4=Widow, 5= Divorced/Separated

AGE: Self: _____ years; Husband (if married): _____ years.

RELATIONSHIP TO HEAD OF HOUSEHOLD WHERE CURRENTLY STAYING: _____

LEVEL OF EDUCATION: Self: []; Husband (if married): []

1= none, 2= Primary incomplete, 3=Primary complete, 4= Post-primary vocational training,
5= Secondary incomplete, 6= Secondary complete, 7= College/University

OCCUPATION: Self: []; Husband (if married): []

1=Formal employment

2=Casual labourer

3=Trader/business

4=Housewife

5=Student

Others (specify): _____

TOTAL NUMBER OF PREGNANCIES (INCLUDING THE CURRENT ONE): _____

STAGE OF PREGNANCY (estimate from LMP or: ANC card): []

1= 1st trimester, 2= 2nd trimester, 3= 3rd trimester

ORDER OF CLINIC VISIT: []

1= 1st Visit 2= 2nd Visit 3= 3rd Visit 4= 4th and above Visit

Q1: During this visit, are you accompanied by your partner?

[If married] []

1=Yes, 2=No

Q2: If "YES", why are you accompanied today?

(1): _____

(2): _____

(3): _____

(4): _____

Q3: If "NO", is your partner aware of this clinic visit? [] 1=Yes 2=No

Q4: If "YES", why did he not accompany you to the clinic?

1: _____
2: _____
3: _____
4: _____

Q5: How do you acquire food eaten by the family? [].

1= Purchasing, 2= Own production, 3= Gifts, 4= Donation

Q6: Who is responsible for providing food to the family? [].

1= Self, 2= Husband, 3= Self and husband

4= Others (specify): _____

Q7: How do you decide on what food to prepare for family consumption? (Tick response given, multiple responses allowed).

- []: Depends on the amount of money available
[]: Depends on whatever food available to the family
[]: Depends on my own preferences
[]: Depends on preferences of other family members
[]: Others (specify): _____

Q8: Do you ever discuss with your husband the food you should eat during pregnancy? []

1= Yes, 2= No

Q9: If "YES" to Q8, what do you discuss?

(1): _____
(2): _____
(3): _____
(4): _____
(5): _____
(6): _____

Number of issues discussed: _____

Q10: If "NO" to Q8, why don't you discuss?

1= Don't Know

2= There is no need to discuss

3= Man not available

4= Man not willing

5= others (specify): _____

Q11: Do you think you are having adequate food for your own consumption during this pregnancy? []

1= Yes 2= No

Q12: If 'YES', why you don't you have adequate food?

1: _____
2: _____
3: _____

Q13: How do you mainly overcome shortages during times of scarcity?

Q11: Do you approve of men being involved in nutritional care and of women during pregnancy? [].

1= Approves completely, 2= Do not approve, 3= Unsure

Q12: How is your husband (or male relatives) assisting you to meet your nutritional and health needs during this pregnancy?

- (1): _____
- (2): _____
- (3): _____
- (4): _____
- (5): _____

Number of responses: _____

Q13: In your own opinion, what role should men play in health and nutrition care of women during pregnancy? (**Ask respondent to mention from most to least important**).

- (1): _____
- (2): _____
- (3): _____
- (4): _____
- (5): _____
- (6): _____

Q14: In your own opinion, how will you describe men's current participation? [].
1= Good 2= Average 3= Below average 4= No response

Q15: In your own opinion, what do you think are the reasons that make some men not to actively participate in health and nutritional care of pregnant spouses? (**Tick response mentioned, multiple responses allowed**).

- [] Due to financial constraints
- [] Lack of information/sensitisation on the importance of such care
- [] Believe that pregnancy is a woman's responsibility
- [] Due to tight work schedules
- [] Have don't care attitude

Others (Specify): _____

Q16: In your own opinion, what can be done to promote men's participation in health and nutrition care of women during pregnancy?

- (1): _____
- (2): _____
- (3): _____
- (4): _____
- (5): _____
- (6): _____

Appendix II: Sample Questionnaire

INVOLVEMENT OF MEN IN HEALTH AND NUTRITIONAL CARE AND SUPPORT OF WOMEN DURING PREGNANCY

QUESTIONNAIRE II (FOR PARTNERS ACCOMPANYING WOMEN TO THE CLINIC)

Questionnaire #: _____

Facility: [_____] (1= Ngara, 2= Riruta, 3= Langata).

Interviewer: _____

Date of Interview: _____ / _____ / 2005.

AGE: _____ years.

ETHNICITY: _____.

RELIGION: [_____] 1= Christian 2= Muslim 3= Others
(specify): _____.

LEVEL OF EDUCATION: [_____]

- | | |
|--------------------------------------|--------------------------|
| 1= none, | 5= Secondary incomplete, |
| 2= Primary incomplete, | 6= Secondary complete |
| 3= Primary complete, | 7= College/university |
| 4= Post-primary vocational training, | |

OCCUPATION: [_____].

- | | |
|----------------------|----------------------|
| 1= Formal employment | 4= Unemployed |
| 2= Casual labourer | 5= Student |
| 3= Trader/business | 6= others (specify): |

TYPE OF MARRIAGE: [_____]. 1= Monogamous, 2= Polygamous

HISTORY OF PREVIOUS MARRIAGE: [_____] 1= Yes, 2= No.

ORDER OF SPOUSE'S PREGNANCY: [_____] 1= 1ST 2= 2ND 3= 3RD 4= 4 and above

NO. OF LIVING CHILDREN: _____.

Are there reasons why you have accompanied your partner to the clinic today? [_____]

1= Yes 2= No.

If 'YES' to above, why did you accompany your partner during this visit?

- 1: _____
2: _____
3: _____
4: _____

Do you ever discuss with your partner concerning her health and nutrition during this pregnancy? [_____]

1= Yes 2= No

If 'YES', what do you discuss?

- 1: _____
2: _____
3: _____
4: _____

5: _____

In your own opinion, should men be actively involved in their partners' health and nutritional care during Pregnancy?

- 1= completely approves
- 2= Do not approve
- 3= Unsure

If 'APPROVES', why is it important to have men involved?

1: _____
2: _____
3: _____
4: _____
5: _____

If 'APPROVES', what role should men play?

1: _____
2: _____
3: _____
4: _____
5: _____

If 'DO NOT APPROVE', why should men not be actively involved?

1: _____
2: _____
3: _____
4: _____

In your own opinion, how will you rate men's current involvement in health and nutritional care and support of women during pregnancy? [].

- 1= Good
- 2= Average
- 3= Below average
- 4= No opinion

Do you think there are obstacles to men's participation? [] 1= Yes 2= No.

If 'YES', name some of the obstacles:

1: _____
2: _____
3: _____
4: _____
5: _____

In your own opinion, what do you think can be done to promote men's participation in health and nutritional care of women during pregnancy?

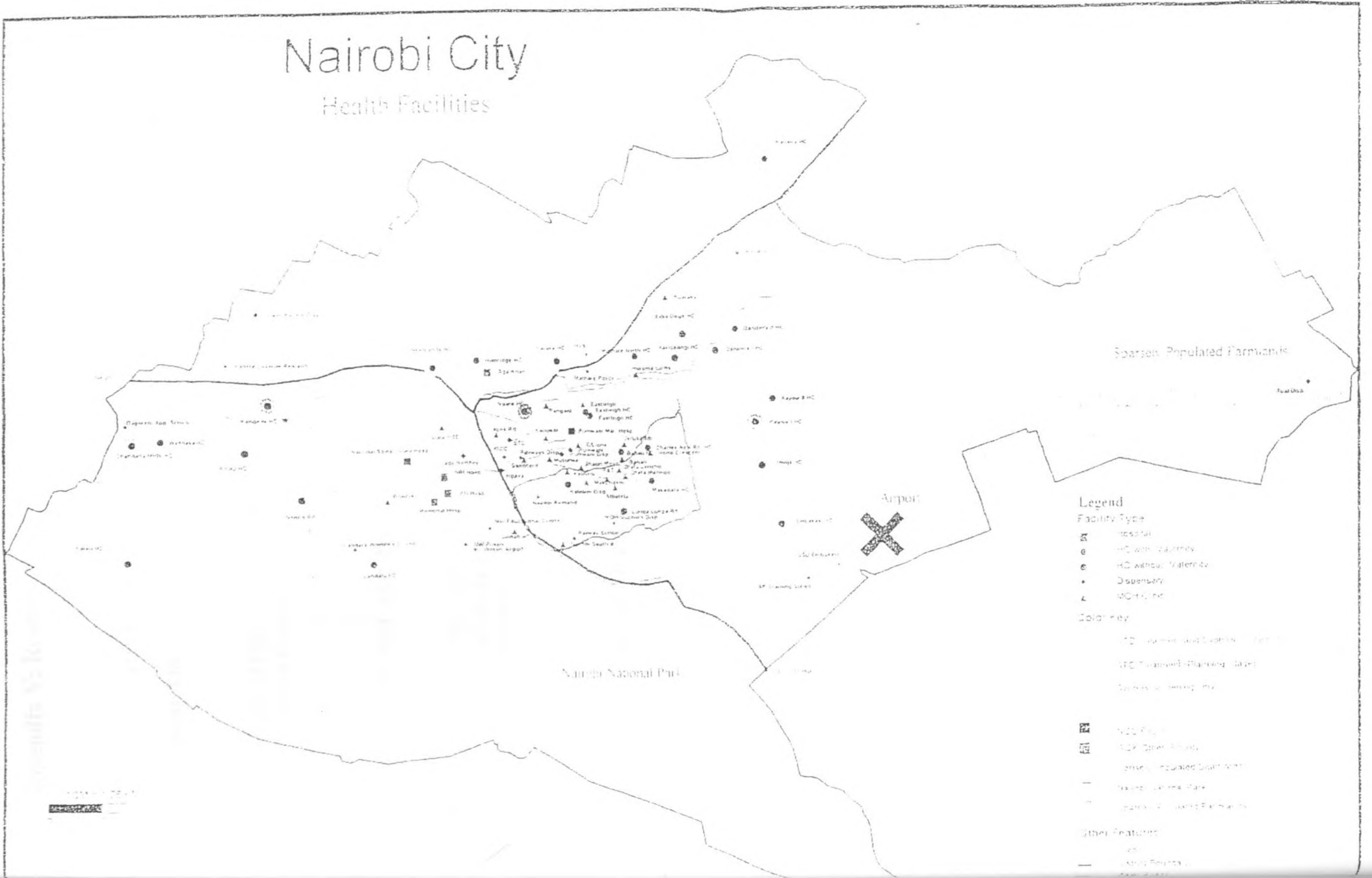
1: _____
2: _____
3: _____

Appendix III: Nairobi City Council Health Facilities

S/NO	NO	FACILITY NAME	DIVISION
1	1	NGARA H/C	CENTRAL DIVISION
2	2	NGAIRA H/C	
3	3	CHEST CLINIC	
4	4	LAGOS	
5	5	KARIOKOR	
6	6	HURUMA LIONS	
7	7	STC	
8	8	INNOCULATION	
9	9	PANGANI	
10	1	STATE HOUSE	
11	2	HIGHRIDGE	WESTLANDS DIVISION
12	3	KARURA	
13	4	KANGEMI	
14	5	WESTLANDS	
15	6	LOWER KABETE	
16	1	EASTLEIGH	
17	2	PUMWANI	PUMWANI DIVISION
18	3	MUTHURWA	
19	4	SHAURI MOYO	
20	5	BAHATI	
21	6	PUMWANI MATERNITY HOSPITAL	
22	7	EASTLEIGH LIONS	
23	8	JERUSALEM	
24	1	LANGATA H/C	
25	2	KAREN	KIBERA DIVISION
26	3	JINAH	
27	1	KAHAWA	
28	2	MATHARE NORTH	KASARANI DIVISION
29	3	KARIOBANGI	
30	4	KASARANI	
31	5	BABA DOGO	
32	6	RUARAKA	
33	1	KAYOLE I	
34	2	KAYOLE II	EMBAKASI DIVISION
35	3	DANDORA I	
36	4	DANDORA II	
37	5	UMOJA	
38	6	EMBAKASI	
39	7	RUAI	
40	1	HONO CLINIC	
41	2	OFAFA CLINIC	
42	3	MARINGO CLINIC	
43	4	MBOTELA CLINIC	
44	5	P & T CLINIC	
45	6	NAIROBI SOUTH B	
46	7	MAKADARA H/C	
47	8	JERICO H/C	
48	9	CHARLES NEW	
49	10	KALOLENI H/C	
50	11	SANDFORD	
51	12	LUNGA LUNGA H/C	
52	13	MAKONGENI	
53	1	WAIHAKA	DAGORETTI DIVISION
54	2	NGONG CLINIC	
55	3	RIRUTA	
56	4	WOODLEY	

Appendix IV: Map of Nairobi City Council Health Facilities

Nairobi City Health Facilities



Legend

Facility Type

- Hospital
- HC with laboratory
- HC without laboratory
- Dispensary
- MCHC/HC

Color Key

- HC with laboratory (light blue)
- HC without laboratory (light green)
- Dispensary (light yellow)

- MCHC/HC
- HC with laboratory
- HC without laboratory
- Dispensary
- Nairobi Urban Area
- Nairobi City Council Wards

Other Features

- Road
- Nairobi National Park
- Airport

Appendix V: Research Authorization Letters

MINISTRY OF EDUCATION, SCIENCE & TECHNOLOGY

Telegrams: EDUCATION", Nairobi

Fax No.
Telephone: 318581
When replying please quote



JOGOO HOUSE
HARAMBEE AVENUE
P. O. Box 30040
NAIROBI
KENYA

MOEST 13/001/35C 404/2

2nd August, 2005

**Fredrick Ochieno
University of Nairobi
P.O. BOX 43844
NAIROBI**

Dear Sir

RE: RESEARCH AUTHORIZATION

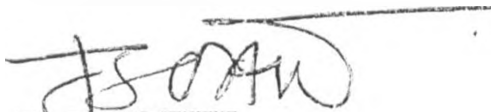
Please refer to your application for authority to conduct research on "Involvement of Men in Health and Nutritional care and support of Women during pregnancy in Nairobi, Kenya".

I am pleased to inform you that you have been authorized to conduct research in Nairobi for a period ending 30th September, 2005.

You are advised to report to the Provincial Commissioner, the Provincial Director of Education and the Provincial Medical Officer of Health, Nairobi before embarking on your research project.

Upon completion of your research project, you are expected to submit two copies of your research report to this Office.

Yours faithfully



**B. O. ADEWA
FOR: PERMANENT SECRETARY**

CITY COUNCIL OF NAIROBI



MEDICAL OFFICER OF HEALTH
TELEGRAMS: "MUNICIPALITY" NAIROBI
30108
TELEPHONE: 224281 EXT.....

CITY HALL
P.O.BOX
NAIROBI

PUBLIC HEALTH DEPARTMENT

PHD/MOH/R.1 VOL.2 (22) 2005

4th August 2005

Fredrick Ochieno,
P.O. Box 2570-00200
NAIROBI.

RE: AUTHORITY TO CONDUCT RESEARCH

Reference is made to your letter dated 12th July 2005 on the above subject.

Your request to carry out research on involvement of Men in Health and Nutrition Care and support of Women during pregnancy at Ngara, Langata, Riruta and Kangemi Health Centres are approved

Note that: -

1. You are required to pay KShs. 1200 research fee.
2. The period of study shall not be more than 3 months from the date of this letter.
3. You should not interfere with the normal work procedures in these Health Facilities.

By a copy of this letter, the Section Heads Concerned shall accord you the necessary guidance.

A handwritten signature in black ink, appearing to read 'D.M. Nguku'.

DR. D.M. NGUKU
MEDICAL OFFICER OF HEALTH

c.c. Central District
Westlands District
Langata District

NAIROBI UNIVERSITY
KABETE LIBRARY